

Course description
Doctor of Veterinary Medicine Program
(Revised Curriculum 2013)

Faculty of Economics

751100 ECON 100 Economics for Everyday Life 3(3-0-6)

Prerequisite : None

Basic economic concepts and application for everyday life concerning production, consumption, markets, national income, public finance, money and banking, inflation and deflation, employment, international trade and finance, and economic development and environment.

Faculty of Humanities

001101 ENGL 101 Listening and Speaking in English 3(3-0-6)

Prerequisite : None

English communication with emphasis on listening and speaking for social interaction and lifelong learning.

001102 ENGL 102 Reading and Writing in English 3(3-0-6)

Prerequisite : None

English reading and writing communication for lifelong with emphasis on vocabulary expansion, systematic grammar review, development of sentence structure and sentence variety, forms and purposes of paragraphs, progressing from mechanical to more meaningful context.

001201 ENGL 201 Critical Reading and Effective Writing 3(3-0-6)

Prerequisite : None

English language skills for critical reading from different sources and media and effective writing on topics of students' interests.

001202 ENGL 202 English in Professional Contexts 3(3-0-6)

Prerequisite : None

Specific language features, language components of professional texts and language skills for professional texts.

011257 PHIL 257 Ethics 3(3-0-6)

Prerequisite : None

Ethical concepts. Development of ethical theories. Ethical theories and problems. Moral problems in contemporary society.

011269 PHIL 269 Philosophy of Sufficiency Economy 3(3-0-6)

Prerequisite : None

Definition, concept and principle of philosophy of sufficiency economy. Livelihood according to philosophy of sufficiency economy. Application of the principle philosophy of sufficiency economy.

013110 PSY 110 Psychology and Daily Life 3(3-0-6)

Prerequisite : None ; for non-major only

Psychology and daily life. Personality. Individual factors. Interpersonal factors. Social factors.

050100 HUGE 100 Usage of the Thai Language 3(3-0-6)

Prerequisite : None

A study of the usage of the Thai Language and practice in writing.

050111 HUGE 111 Man and Quest for Knowledge 3(3-0-6)

Prerequisite : None

Development of thoughts and methods of thinking, which result in knowledge acquisition. Ultimate goals of individuals and societies. Inheritance, interconnection and integration of knowledge. Debates in theoretical approaches to knowledge. Modes of explanation on present social phenomena.

Faculty of Education

074101 EDHL 101 Promoting of Health in Everyday Life 3(2-2-5)

Prerequisite : None

Health and important of promoting of health. Promoting of personal and community health. An evaluate of personal and community health status.

Faculty of Fine Arts

109115 FAGE 115 Life and Aesthetics 3(3-0-6)

Prerequisite : None

Study of beauty in general; beauty that can be found in nature, works of art, traditions and culture and modern media used in daily life. The art section is divided into aesthetics of western and eastern art. The traditions and culture section takes into account inspiration, beliefs and cultural creations that reflect social wisdom.

Faculty of Business Administration

702101 FINA 101 Finance for Daily Life 3(3-0-6)

Prerequisite : None

Exploring your financial health, Planning your personal financial plan, Revenue, expense, and debt service management, Insurance, Knowing how to make money work, Tax planning, Preparing for happiness and case study of financial planning.

703103 MGMT 103 Introduction to Entrepreneurship and Business 3(3-0-6)

Prerequisite : None

Entrepreneur role in economics development country Entrepreneur and business opportunities. The characteristic of entrepreneur and motivation factors, environment, types of business, forms of business, business plans, principle of management, marketing management, production management, financial management, accounting, taxation, business law, international business and business ethics for entrepreneur.

703104 MGMT 104 Ethical Reasoning 1(1-0-2)

Prerequisite : None

Nature of ethical issues. Ethical issues and defining moment. Game for ethical principles. Game for applying ethical principles. Communicating ethical verdicts to public. Game for learning win-win relationship. Principle of win-win relationship.

703131 MGMT 131 Personal Leadership Development 1(1-0-2)

Prerequisite : None

Foundations of personal development. Responding to stimulus. Personal vision. Personal management. Mutual benefit. Mutual understanding. Constructive cooperation. Self renewal.

Faculty of Law

176100 LAGE 100 Law and Modern World 3(3-0-6)

Prerequisite : None

Legal concepts. Legal Institutions. Law and its roles in society. Law and international societies. Law and local problems. Law and community rights. Roles of law in the rural and urban societies. Roles of law in the globalized era. Analyses of issues derived from case studies relating to law and modern world.

Faculty of Science

201111 SC 111 The World of Science 3(3-0-6)

Prerequisite : None

The nature and evolution of science and technology. The solar system, modern observations of planets and moons. The interrelations of Earth's geosphere, hydrosphere, atmosphere and biosphere. Abundance, distribution and utilization of natural resources. Contemporary social issues in science and society. Enrollments are not permitted for non- science-based students.

201114 SC 114 Environmental Science In Today's World 3(3-0-6)

Prerequisite : None

Environment and impacts from anthropogenic activities, Environmental concerns in international venues, Importance of biodiversity; conservation for the future, Resource use, Population growth and pollution, Ozone depletion, Global warming and climate change, Energy crisis, Sustainable development (balancing of natural resource consumption and replacement), and Current environmental issues.

204100 CS 100 Information Technology and Modern Life 3(2-2-5)

Prerequisite : None

Computers in everyday life, Data processing and information management, Office automation software for modern life and Internet and webpage construction.

203154 CHEM 154 Basic Chemistry for Health Science Students 2(2-0-4)

Prerequisite : None

Chemical thermodynamics, chemical equilibrium, chemical kinetics, aliphatic hydrocarbons, aromatic compounds, stereochemistry, nucleophilic substitution, free radicals, alcohols ethers and phenols, aldehydes and ketones, carboxylic acids and their derivatives, amines, carbohydrates, amino acids, peptides and proteins, lipids, heterocycles and nucleic acids.

203159 CHEM 159 Basic Chemistry Laboratory for Health Science Students 1(0-3-0)

Prerequisite : concurrent to 203153

The basic chemical experiments related to the following topics: Heats of chemical reactions, electrochemical cells, acid-base indicators and hydrolysis of salts, buffer solutions: preparation and properties, rate of chemical reactions, steam distillation, identification of hydrocarbons, alcohols, phenols, aldehydes and ketones, stereochemistry, saponification of lipid, TLC separation of amino acids, isolation and identification of casein, isolation of lipids from egg yolk, isolation and identification of DNA from yeast.

207110 PHYS 110 Physics : The Science that Changed the World 3(3-0-6)

Prerequisite : None

Paradigms and their revolutions, Ptolemy, Copernicus, and Kepler cosmos, Mechanistic perspective, Energy and thermodynamics, Electromagnetism, Atoms and matters, Quantum theory and holistic perspective, Space, time and theory of relativity and Frontier physics.

207125 PHYS 125 Physics for Veterinary Students 1(1-0-2)

Prerequisite : None

Physics in health sciences, stability and equilibrium of body motion, elasticity, impulsive force and bone fractures, fluids mechanics and its medical applications, waves and properties of waves, sound and ultrasound imaging, electromagnetic spectrum and medical X-rays.

207195 PHYS 195 Physics Laboratory for Veterinary Students 1(0-3-0)

Prerequisite : None

Measurement and error, coefficient of friction, rotational motion, moment of inertia and torsional motion of rigid body, surface tension of liquid, Young's modulus, specific heat capacity of metal, resonance of sound, Ohm's law and electrical meter, charge and discharge of capacitor, transformer and electrical equivalence of heat, resistor, inductor and capacitor in AC circuits, mirrors and lenses, interference and diffraction of light and spectrum of hydrogen atoms.

Faculty of Medicine

327100 FMED 100 Disaster Preparedness for Health and Life 3(3-0-6)

Prerequisite : None

Basic knowledge of disaster science such as natural disaster including disease outbreak, accidental disaster and intentional disaster; learning from major historic disaster events. Preparedness of disaster at international and national level in government and non-government settings. Basic knowledge of health and safety preparedness while exposing to disaster events, before during and after. How to access the emergency medical service (EMS) during disaster events.

303261 BCHM 261 Biochemistry for Veterinary Students 6(4-4-10)

Prerequisite : BIOL 182 (202182), CHEM 152 (203152) and
CHEM 158 (203158) or
BIOL 182 (202182), CHEM 153 (203153) and
CHEM 159 (203159) or
VM 108 (651108), CHEM 154 (203154) and
CHEM 159 (203159)

The course emphasizes on the structure and functions of biomolecules in the cells of human and other mammals. The details of metabolism and regulation of biomolecules by hormones and enzymes, the production of energy in the cell. Gene expression and genetic diseases. Molecular diseases include cancer, diabetes, heart diseases, nutritional diseases, and thalassemia, the biochemistry of blood and biological fluids. The principles of nutrition, various toxic substances in foods and the environment, carcinogenesis and the biochemistry of antibiotics are also included. These are discussed in a wide range for an understanding of biochemistry and application to prevent and control the causes of diseases. In the laboratory work are included the basics of biochemical instruments, chemistry tests for biomolecules, the activity and functions of enzymes, biochemistry tests for blood and urine, the determination of nutrients and toxic substances in foods and drinks.

318341 PATH 341 General Pathology for Veterinary Students 3(2-3-5)

Prerequisite : third year standing

The basics of general pathology including etiology, pathogenesis, morphologic changes and functional derangements and clinical significance. Moreover, the study includes neoplasm, both benign and malignant.

320361 PHCO 361 Pharmacology for Veterinary Students 4(3-3-7)

Prerequisite : third year standing

Study of drugs and principles of pharmacology with special emphasis on mechanisms of drug action, effects on organ systems, pharmacokinetics, side effects and toxicity, indications, contraindication, precaution and drug interactions including chemical and drug residues in livestock. Laboratory sessions to promote understanding of the subject and to gain insight into problems of drug usage.

321361 PHSO 361 Physiology for Veterinary Students 5(4-4-10)

Prerequisite : third year standing

The basic medical functions including normal and abnormal mechanisms which regulate mammalian organs will be studied.

324321 RADI 321 Radiology for Veterinary Students 2(1-3-3)

Prerequisite : third year standing

Basic knowledge and skill in radiographic imaging in assisting the diagnosis of abnormality in animals and application of radiological instruments for routine examinations and research.

Faculty of Nursing

571111 NGGE 111 Critical Thinking and Creative Thinking 3(2-2-5)

Prerequisite : None

Fundamental principles of thinking, forms of thinking, definitions of critical thinking and creative thinking. Principles and components of critical thinking and creative thinking. Advantages of critical thinking and creative thinking. Factors related to critical thinking and creative thinking. Development and enhancement of critical thinking and creative thinking and use of critical thinking and creative thinking in daily life.

571113 NGGE 113 Maintenance of Equilibrium in Adolescent Life 3(3-0-6)

Prerequisite : None

Study of factors influencing adolescents' way of life, including both positive and negative factors. Ways of maintaining the equilibrium in adolescents' way of life. Prevention and management of physical, psychosocial, emotional and spiritual problems in adolescent's lives.

Faculty of Associated Medical Sciences

510100 AMS 100 Wellness 3(2-6-4)

Prerequisite : None

Involving the wellness and health status in physical, emotional, social, intellectual and spiritual wellness including principle of good health in holistic both knowledge and merit, following by diet, nutrition, exercise, fitness, wellness and health status laboratory monitoring, stress management and ethic.

Faculty of Agriculture

351100 AEC 100 Agricultural Economics Based on Sufficiency Economy 3(3-0-6)

Prerequisite : None

Study on His Majesty the King's sufficiency economy philosophy and the royal obligations as a foundation and representations of what applicable for leading one's daily life at the individual, household, and community levels. Stress on students' the learning from experience of various rural and agricultural communities which have applied the sufficiency economy principle, exercising systematic analytical thinking's, and proposing agricultural business model within sufficiency economy framework.

359204 HORT 204 Horticultural for Health 2(2-0-4)

Prerequisite : None

Importance, categories, production, and health benefits from horticultural crops which are vegetables, medicinal plants, fruits, and flowers, including their use as horticultural therapy.

362211 CONS 211 Principles of Conservation 3(3-0-6)

Prerequisite : None

Problems concerning deterioration of natural resources and environments. Principles and methods of management and conservation of natural resources.

351211 CONS 211 Agricultural Business Management 3(3-0-6)

Prerequisite : AEC 200 (351200) or
ECON 100 (751100) or
ECON 101 (751101)

An application of economic principles and business methods in decision making to problems confronting agricultural business; problems in acquisition, organization and management of land, labor and capital.

356202 ANS 202 Principles of Feed and Animal Nutrition 3(3-0-6)

Prerequisite : None ; for non – major students

Types and roles of feedstuffs, composition and evaluation of feed, digestion and metabolism of nutrients, feed preservation and processing and nutrient requirements of animals.

356231 ANS 231 Animal Breeding 3(3-0-6)

Prerequisite : None ; for non – major students

Introduction to genetic foundations of animal breeding, gene expression Mendel's law of genetic inheritance, estimation of repeatability and breeding value, principles of selection and improvement.

356242 ANS 242 Principle of Monogastric Animal Production 3(3-0-6)

Prerequisite : None ; for non – major students

Breeding, feeding, housing and management practices for poultry and swine, the production system, prevention and control of common diseases.

356243 ANS 243 Principle of Ruminant Production 3(3-0-6)

Prerequisite : None ; for non – major students

Breed origins of important ruminants, types and breeds for production of milk and meat, reproduction, lactation, growth and development of compound stomachs, forms of husbandry and systems of production for milk and meat, Genetic improvement of production performance and management of forage production.

356261 ANS 261 Statistical Method and Inference in Animal Husbandry 3(3-0-6)

Prerequisite : second year standing

Statistic with special reference to the application in animal science, from probability, normal distribution, test of significance to factorial and splitplot design. Correlation and regression. Analysis of covariance. The computation of heritability and repeatability.

Faculty of Veterinary Medicine

651100 VM 100 Dog Care 2(1-2-3)

Prerequisite : None

General considerations for dog's owner, principle of dog care, behavior, restraint, reproductive system pregnancy including basic health information

651104 VM 104 Elephant in Thai Cultures 2(2-0-4)

Prerequisite : None

Study of Thai elephant cultures and knowledge, as the elephant biology, elephant in Thai cultures, customs, legends faiths, religions, and histories, the knowledge of the illustrated manuscript (the book on elephant science) , elephant poaching, elephant training, logging, and to domesticate elephant, mahout and elephant keeper, elephant managements, elephants in Thailand.

651105 VM 105 Ecosystem and Health 3(3-0-6)

Prerequisite : None

The relations between ecosystem and health and effects on human and animal life. Integration of knowledge of science for explaining the changes of plants, animals and environment, especially the changes that affect to human life effects.

651107 VM 107 Learning through Activities 2(1-3-0)

Prerequisite : None

This course is designed to introduce students in developing their life-skill experiences through activities which are initiated by them. Learning activities will be emphasizing on the development of students personality, morality and ethical behaviors. Attention will be given to various learning activities including recognizing art and culture, understanding of local wisdom, preserving of environment as well as exploring the role of community-based economics. Various activities will also be organizing by students under the supervision agreement of class advisors with private/governmental organizations.

651108 VM 108 Veterinary Embryology 2(1-3-3)

Prerequisite : first year standing; for veterinary medicine students

Formation of gametes, fertilization, preimplantation embryo development and fetal development in domestic animals. Comparative placentation in mammals. Developmental anomalies of clinical significances and basic veterinary embryonic biotechnology.

651201 VM 201 Body Structure and Function 1 4(2-6-7)

Prerequisite : VM 108 (651108)

Comparative study in gross anatomy, histology, physiology and functional mechanism of musculoskeletal system, joint and gastrointestinal system of several domestic animals, including the clinical applications.

651202 VM 202 Body Structure and Function 2 5(3-6-9)

Prerequisite : PHSO 361 (321361), VM 201 (651201)

Comparative study in gross anatomy, histology, physiology and functional mechanism of integumentary, reproductive , endocrine, and urinary systems of several domestic animals, including the clinical applications.

651203 VM 203 Agents of Diseases 1 3(2-3-5)

Prerequisite : second year standing ; for veterinary medicine students

Basic knowledge of pathogenic agents in animals, classification, isolation and identification of fungi, pathogenic fungi in animal, properties and classification of bacteria and pathogenic bacteria in animal.

- 651231 VM 231 Principle of Aquatic Animal Production 2(2-0-4)
 Prerequisite : second year standing ; for veterinary medicine students
 Lecture on principle of aquatic animal biology, principle of aquaculture, genetic in fisheries, nutrition of aquatic animal, breeding management, soil and water management and algae in aquaculture. A variety of important aquaculture species for instance fish, invertebrate, reptiles and amphibians. It also covers aquaculture economy.
- 651232 VM 232 Basic Horse Riding and Horse Care 2(1-3-3)
 Prerequisite : second year standing ; for veterinary medicine students
 Basic principles of horse restrain, horse stable management, horse feeding and nutrition, horse care and basic principle of horse riding.
- 651291 VM 291 Veterinary Integrative Problem Solving 1 2(2-0-4)
 Prerequisite : second year standing ; for veterinary medicine students
 Use of problem based learning system to integrate material and problems taught in the second semester of the second year through seminar. Practice problem analysis and integration of subject material, information search, veterinary terminology and scientific literature review.
- 651292 VM 292 Animal Behaviors and Restraints 2(1-2-3)
 Prerequisite : second year standing ; for veterinary medicine students
 Animal handling, restraint and animal behavior.
- 651301 VM 301 Body Structure and Function 3 3(2-3-5)
 Prerequisite : PHSO 361 (321361), VM 201 (651201)
 Comparative study in gross anatomy, histology, physiology and functional mechanism of the respiratory, cardiovascular and hemo-lymphatic systems of several domestic animals, study of body structure and functional mechanism of fish, including the clinical applications.
- 651302 VM 302 Body Structure and Function 4 3(2-3-5)
 Prerequisite : PHSO 361 (321361), VM 201 (651201)
 Comparative study in gross anatomy, histology, physiology and functional mechanism of the nervous system and special sense organs of several domestic animals, study of body structure and functional mechanism of avian, including the clinical applications.

651304	VM 304	Agents of Diseases 2	5(3-6-9)
		Prerequisite : third year standing; for veterinary medicine students.	
		Classification, morphology and identification of agents of diseases in domestic animals comprising helminthes, arthropods, protozoa rickettsiaes, viruses and prions.	
651305	VM 305	Veterinary Pharmacology and Toxicology	4(3-3-7)
		Prerequisite : third year standing; for veterinary medicine students.	
		Drugs used in animals, toxic substances and residues.	
651322	VM 322	Theriogenology	3(2-3-5)
		Prerequisite : third year standing; for veterinary medicine students.	
		Male and female theriogenology in ruminant, swine, poultry, aquatic animal, canine and feline, equine, elephant and wildlife. Mating behavior, obstetrics, and biotechnology in reproduction.	
651390	VM 390	Veterinary Field Practice 1	1(0-6-3)
		Prerequisite : third year standing; for veterinary medicine students.	
		Provide experience in farm management practice through working on commercial farm or in other related facilities.	
651391	VM 391	Veterinary Integrative Problem Solving 2	2(2-0-4)
		Prerequisite : third year standing; for veterinary medicine students.	
		Use of problem based learning system to integrate material and problems taught in the first and the second year through seminar. Practice problem analysis and integration of subject material, information search, veterinary terminology and scientific literature review.	
651392	VM 392	Veterinary Integrative Problem Solving 3	2(2-0-4)
		Prerequisite : third year standing; for veterinary medicine students.	
		Using problem based learning systems to integrate materials and problems taught in the 2nd semester of the 3rd year in a seminar.	
651414	VM 414	Veterinary Pathobiology 2	3(2-3-5)
		Prerequisite : fourth year standing ; for veterinary medicine students.	
		Functional aspects of humeral and cellular immune response, hypersensitivity, mechanisms of immunity to microbial infection, tumor immunity including immune mediated diseases and immunological assay methods.	

651415 VM 415 Veterinary Pathobiology 3 5(3-6-9)

Prerequisite : fourth year standing ; for veterinary medicine students.

The course is focusing on the reactions of specific organ systems to injuries including the applications and interpretations of basic laboratory tests applied to clinical diagnosis of corresponding systemic alterations.

651416 VM 416 Food Safety in Veterinary Medicine 1 4(3-3-7)

Prerequisite : fourth year standing ; for veterinary medicine students.

Role of veterinarian in food safety from animal origin, specimen sampling for quality control, roles of microorganism in food from animal origin on food chain, foodborne disease, composition of food from animal origin, deterioration and preservation in food from animal origin, raw material and food additive in animal-origin food production, contaminant and impurity in food from animal origin and technology in animal-originated food production food.

651417 VM 417 Food Safety in Veterinary Medicine 2 4(3-3-7)

Prerequisite : fourth year standing ; for veterinary medicine students.

Hygienic production and processing of food from animal origin, principle of quality control in meat, milk, egg and aquatic animal, food hygiene, personal hygiene, cleaning and use of disinfectant, cross-contamination management and food processing standard for consumer and export.

651418 VM 418 Veterinary Environmental Health 1(1-0-2)

Prerequisite : fourth year standing ; for veterinary medicine students.

Mutagen and carcinogen, residue toxicology, animal waste management, environmental toxicology, environmental hygiene and sustainable development, environmental management from farm and animal product processing, laws and regulations concerning environment, risk analysis and risk assessment.

651419 VM 419 Veterinary Laws 1(1-0-2)

Prerequisite : fourth year standing ; for veterinary medicine students.

Introduction to law, veterinary laws and legislative practice, public health laws, and rules and regulations mandated by international organization.

651424 VM 424 Zoonoses 2(2-0-4)

Prerequisite : fourth year standing ; for veterinary medicine students.

Zoonoses classification, causative agents, transmission, vector, clinical symptoms in both human and animals, prevention, diagnosis and treatment of important zoonoses caused by virus, bacteria, parasite, chlamydia and fungus.

651425 VM 425 Veterinary Epidemiology 3(2-2-5)

Prerequisite : fourth year standing ; for veterinary medicine students.

Scope and significance of epidemiology, disease occurrence and dissemination, epidemiological parameters, sample size and sampling methods, association and causation, epidemiological studies, diagnostic test evaluation, disease screening, outbreak investigation, disease surveillance, disease prevention control and eradication, molecular epidemiology, and biostatistics.

651426 VM 426 Principle and Diagnostic Techniques of Veterinary Medicine 5(4-2-9)

Prerequisite : fourth year standing ; for veterinary medicine students.

Principle of history taking, physical examination, problems and clinical signs, specimen collection techniques, diagnostic techniques, immunization and drug administration of veterinary medicine

651427 VM 427 Veterinary Surgery 5(3-6-9)

Prerequisite : fourth year standing ; for veterinary medicine students.

Theories and practice of anesthesia and surgery in small animal, equine, wildlife, aquatic animal, ruminant and swine.

651432 VM 432 Diseases of Aquatic Animal, Amphibians and Reptiles 2(2-0-4)

Prerequisite : fifth year standing; for veterinary medicine students

Lecture on common diseases, diagnosis, therapeutic techniques, prevention and control of disease in aquatic animal, amphibians and reptiles.

651433 VM 433 Laboratory Animal Science 3(2-2-5)

Prerequisite : fourth year standing ; for veterinary medicine students.

General consideration in laboratory animal care, species and breed, biology and husbandry, housing and management, production system , prevention and control of disease, materials for laboratory animal care and technique for restraint, veterinary clinical procedure of laboratory animals, and ethics in usage of laboratory animals.

651491 VM 491 Veterinary Field Practice 2 1(0-6-3)

Prerequisite : fourth year standing ; for veterinary medicine students.

Practice in vaccine production through visiting government and private biological production units.

- 651492 VM 492 Veterinary Integrative Problem Solving 4 2(2-0-4)
- Prerequisite : fourth year standing ; for veterinary medicine students.
- Using problem based learning systems to integrate materials and problems taught in the 1st semester of the 4th year in a seminar.
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- 651495 VM 495 Veterinary Perspectives 2(2-0-4)
- Prerequisite : sixth year standing; for veterinary medicine students
- Veterinary hospital and practice management, human-animal bonds, cost-benefits in animal production, communication skills, professional development, information management, animal welfare and laws concerned.
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- 651520 VM 520 Principle of Production Medicine 2(2-0-4)
- Prerequisite : fifth year standing; for veterinary medicine students
- The production systems, disease surveillances, prevention and control, production efficiency monitoring, animal health and production management in animal, problems and problem solving in production medicine.
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- 651531 VM 531 Diseases of Dogs and Cats 5(5-0-10)
- Prerequisite : fifth year standing; for veterinary medicine students
- Production systems, management and mismanagement problems, common diseases, surgical and reproductive problems of dogs and cats.
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- 651533 VM 533 Diseases of Zoo and Exotic Animal 2(2-0-4)
- Prerequisite : fifth year standing; for veterinary medicine students
- Production system, management and mismanagement problems common diseases, surgical problem and reproductive problem of zoo and exotic animal
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- 651534 VM 534 Diseases of Poultry 4(4-0-8)
- Prerequisite : fifth year standing; for veterinary medicine students
- Production systems, management and mismanagement problems, common diseases, and reproductive problems of poultry.
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- 651536 VM 536 Diseases of Swine 5(5-0-10)
- Prerequisite : fifth year standing; for veterinary medicine students
- Production systems, management and mismanagement problems, common diseases, surgical and reproductive problems of swine.

- 651537 VM 537 Diseases of Horse 3(3-0-6)
 Prerequisite : fifth year standing; for veterinary medicine students
 Diseases and problems in medicine and surgery of musculoskeletal, nervous system and ocular, digestive, respiratory, skin and reproductive systems, and proper corresponding treatments. Diseases and problems from improper management, malnutrition, epidemic diseases in horses and prevention and pediatric diseases and problems.
- 651538 VM 538 Diseases of Ruminants 5(5-0-10)
 Prerequisite : fifth year standing; for veterinary medicine students
 Major systematic diseases and disorders of ruminant, monitoring management problems and solutions.
- 651541 VM 541 Clinical Rotation in Small Animal 3(0-9-4)
 Prerequisite : fifth year standing; for veterinary medicine students
 Clinical skills in small animal including medicine, surgery, clinical pathology and necropsy.
- 651542 VM 542 Clinical Rotation in Veterinary Public Health 1(0-3-1)
 Prerequisite : fifth year standing; for veterinary medicine students
 Practice for veterinary medicine student in the field of veterinary public health under supervision of instructors.
- 651543 VM 543 Clinical Rotation in Elephant and Wildlife 1(0-3-1)
 Prerequisite : fifth year standing; for veterinary medicine students
 Clinical skills in elephant and wildlife including elephant camp and zoo design and management, restraint of elephant and wildlife, diagnostic and therapeutic techniques of elephant and wildlife, treatment of elephant and wildlife, management of elephant and wildlife, and conservation of elephant and wildlife.
- 651544 VM 544 Clinical Rotation in Equine 1(0-3-1)
 Prerequisite : fifth year standing; for veterinary medicine students
 Clinical skills in equine including horse restrain, physical examination and basic disease diagnosis, techniques for drug administration, intravenous catheterization and blood collection, dental care and floating, nasogastric intubation, hoof care, trimming and shoeing, lameness examination, bandaging techniques for extremities, perineural and intra-articular anesthesia and reproductive system examination.

651545 VM 545 Clinical Rotation in Poultry 1(0-3-1)

Prerequisite : fifth year standing; for veterinary medicine students

Clinical skills in poultry including diseases prevention and control, medicine, clinical pathology and necropsy, farm management system and analytic problem solving.

651546 VM 546 Clinical Rotation in Swine 1(0-3-1)

Prerequisite : fifth year standing; for veterinary medicine students

Clinical skills in swine including swine production analysis and herd health management, clinical pathology and necropsy, management and problem solving in the pig farm and analysis of capital expenditure in the pig farm.

651547 VM 547 Clinical Rotation in Ruminant 2(0-6-3)

Prerequisite : fifth year standing; for veterinary medicine students

Clinical skills in ruminant including herd health management, medicine, laboratory diagnosis, milking machine performance and maintenance and basic examination of reproductive system.

651548 VM 548 Clinical Rotation in Aquatic Animal 1(0-3-1)

Prerequisite : fifth year standing; for veterinary medicine students

Clinical skills in aquatic animal including drugs and chemical substances administration, anesthesia and surgery, blood sampling, physical examination, necropsy and diagnostic procedure, water sampling and analysis, production and management in fish farm.

651594 VM 594 Veterinary Integrative Problem Solving 5 2(2-0-4)

Prerequisite : fifth year standing; for veterinary medicine students

Using problem based learning systems to integrate materials and problems taught in 2nd semester of the 4th year in a seminar.

651630 VM 630 Aquatic Animal Practice – Clerkship 3(0-9-4)

Prerequisite : sixth year standing; for veterinary medicine students

Practice clinical skills in aquatic animal including production management, diagnostic and therapeutic techniques and studying on aquatic animal researches under supervision of instructors and adjoined veterinarians in animal health center, demonstration farm, commercial farm, animal hospital and other related facilities in government and private sectors.

651631 VM 631 Elephant and Wildlife Practice – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Practice clinical skills in elephant, wildlife and exotic pets including health management, necropsy, diagnostic and therapeutic techniques and studying on elephant, wildlife and exotic pets researches under supervision of instructors and adjoined veterinarians in animal health center, farm, animal hospital and other related facilities in government and private sectors.

651640 VM 640 Necropsy and Diagnostic Laboratory – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Provide clinical experiences in necropsy and diagnostic laboratories practice through working veterinarian under supervision of instructors or adjoined veterinarians in Animal Health or demonstration farm, commercial farm, animal hospital or other related facilities.

651641 VM 641 Abattoirs and Veterinary Public Health – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Provide clinical experiences in abattoir and veterinary public health practice through working veterinarian under supervision of instructors or adjoined veterinarians in Animal Health or demonstration farm, animal hospital or other related facilities.

651642 VM 642 Anesthesiology and Diagnostic Imaging – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Providing clinical experience in anesthesiology and diagnostic imaging practice through working as a veterinarian under supervision of instructors or adjunct instructors in the Animal Health Center, demonstration farm, private/corporate farm, animal hospital or other related facilities.

651643 VM 643 Companion Animal Practice – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Providing clinical experiences in companion animal practice through working as a veterinarian under supervision of instructors or adjunct instructors in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651644 VM 644 Equine Practice – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Provide clinical experiences in equine practice through working as a veterinarian under supervision of instructors or adjoined veterinarians in Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651646 VM 646 Swine Practice – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Providing clinical experience in swine practice through working as a veterinarian under supervision of instructors or adjunct instructors in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651647 VM 647 Ruminant Practice – Clerkship 1 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Providing clinical experience in dairy practice through working as a veterinarian under supervision of instructors or adjunct instructors in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651648 VM 648 Ruminant Practice – Clerkship 2 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Providing clinical experience in beef cattle practice through working as a veterinarian under supervision of instructors or adjunct instructors in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651649 VM 649 Avian Practice – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Providing clinical experience in avian practice through working as a veterinarian under supervision of instructors or adjunct instructors in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651650 VM 650 Problems in Necropsy and Diagnostic Laboratory – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in diagnostic laboratory and necropsy practice through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651651 VM 651 Problems in Abattoirs and Veterinary Public Health – Clerkship 3(0-9-4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in veterinary public health practice through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651652 VM 652 Problems in Anesthesiology and Diagnostic Imaging – Clerkship 3(0-9-4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in anaesthesiology and diagnostic imaging practice through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651653 VM 653 Problems in Companion Animal Practice – Clerkship 3(0-9-4)

Prerequisite : sixth year standing; for veterinary medicine students

Practice of clinical experience in companion animal field under supervision of instructors or adjoined veterinarians in the animal health center, animal hospital or other related facilities

651654 VM 654 Problems in Equine Practice – Clerkship 3(0-9-4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in equine practice through working as a through veterinarian and investigation of interesting problems under supervision of instructors or adjoined veterinarians in Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651656 VM 656 Problems in Swine Practice – Clerkship 3(0-9-4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in swine practice through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651657 VM 657 Problems in Ruminant Practice – Clerkship 3(0-9-4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in ruminant practice through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651658 VM 658 Problems in Avian Practice – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in poultry practice through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651659 VM 659 Problems in Food Animal Surgery – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in food animal surgery through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651660 VM 660 Problems in Food Animal Theriogenology – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in food animal theriogenology through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651661 VM 661 Problems in Companion Animal Surgery – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in companion animal surgery through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651662 VM 662 Problems in Companion Animal Theriogenology – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in companion animal theriogenology through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

651663 VM 663 Intensive Care and Emergency Unit – Clerkship 3(0–9–4)

Prerequisite : sixth year standing; for veterinary medicine students

Advanced clinical experience in intensive care and emergency units through working as a veterinarian and through investigation of interesting problems under supervision of instructors or adjoined veterinarians in the Animal Health Center, demonstration farm, commercial farm, animal hospital or other related facilities.

- 651664 VM 664 Veterinary Preceptorship 3(0-9-4)
- Prerequisite : sixth year standing; for veterinary medicine students
- Advanced clinical experience in veterinary practice emphasizing actual practice situations in a focused area of clinical expertise with experienced veterinarians. Under the supervision of instructors, students develop their own specific goals.
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- 651665 VM 665 Problems in Aquatic Animal Practice – Clerkship 3(0-9-4)
- Prerequisite : sixth year standing; for veterinary medicine students
- Practice specific clinical skills in aquatic animal including production management and diagnostic and therapeutic techniques under supervision of instructors and adjoined veterinarians in animal health center, demonstration farm, commercial farm, animal hospital and other related facilities in government and private sectors.
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- 651666 VM 666 Problems in Elephant and Wildlife Practice – Clerkship 3(0-9-4)
- Prerequisite : sixth year standing; for veterinary medicine students
- Practice specific clinical skills in elephant, zoo animal, wildlife and exotic pet through working as veterinarian and investigation of interested problems under supervision of instructors and adjoined veterinarians in Animal Health Center, elephant hospital, elephant camp, zoo or other related facilities.
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- 651698 VM 698 Veterinary Cooperative Education 6(0-36-18)
- Prerequisite : sixth year standing; for veterinary medicine students
- Work in co-operative units, such as animal farms, hospitals, clinics, companies, either governmental or private units, under the supervision of instructors, or veterinarians, or professional specialists from co-operative units that students enroll for work.
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- 651699 VM 699 Research in Veterinary Medicine 6(1-30-17)
- Prerequisite : sixth year standing; for veterinary medicine students
- Practice, according to the research methodology, to increase the experience and skill for conducting a research project in veterinary medicine, under general guidance and supervision of instructors who have expertise on the students' selected projects.