Faculty Of Veterinary Medicine

Veterinary Medicine Program









Course Specification Veterinary Anatomy (2)

I	I. Course Identification and General Information:						
1	Course Title:	Veterinary Anatomy (2)					
2	Course Number & Code:	ANT232					
		С.Н					
3	Credit hours:	Theoretical	Practical	Training	Seminar	Total	
		2	2			4	
4	Study level/ semester at which this course is offered:	Second Year: Second Semester					
5	Pre –requisite (if any):		Al	NT231			
6	Co –requisite (if any):		Ŋ	None			
7	Program (s) in which the course is offered:	Bachelor Veterinary Medicine					
8	Language of teaching the course:	English					
9	Location of teaching the course:	Faculty of Veterinary Medicine					
10	Prepared by:	Dr. Sale	eh Ahmed M	Iohammed A	li Alomais	i	
11	Date of approval:						

II. Course description:

The course aimed to provide the student with knowledge and skills in the comparative and applied anatomy in the domestic animals

This course covers the pleura and its reflection, respiratory, urinary, male and female genital in addition to the anatomy of nervous system, lymphatic.

The knowledge about normal shape, form and structure of animals in male and female to differentiate between the diseased cases and application of the anatomical facts with the clinical sciences

Understanding of veterinary anatomy fundamentals, beginning with blood vessels of head and neck, nervous system and special anatomy of the sense organs.

Prepared by Dr. Saleh Alomaisi

Quality Assurance Unit Dr. Abdulraqeb Alshami

Dean of the Faculty Ass. Prof. Dr. Abdu Alraoof Al-Shawkany

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	III. Intended learning outcomes (ILOs) of the course:				
(A)	(A) Knowledge and Understanding:				
Ali	gnment of Course Intended Learning Outcomes (CILOs) to Pr	_	=	LOs) in: Knowledge and	
	Unde				
Pi	rogram Intended Learning Outcomes (Sub- PILOs) in:	C	ourse Intended Learning (Knowledge and U		
	Knowledge and Understanding		Kilowieuge and Oi	nuerstanumg	
After	completing this program, students will be able to:	After	completing this course, studen	ts will be able to:	
	• • • • • • • • • • • • • • • • • • •		,		
A1-	Demonstrate knowledge and understanding of	a1-	Explain the general and co	•	
	concepts and principles of general culture,		structures and topography		
	basic science, and supportive to veterinary medicine.		and systems organs with sp clinical significance.	pecial references to their	
A2-	Illustrates basic concepts, principles, and	a2-	Identify the comparative fe	eatures of skulls	
112-	theories related to animal production, animal	a2-	respiratory, cardiovascular		
	health and nutrition, behavior management,		domestic animals.		
	breeding and care, and animal-related ethical				
	Bloggs.				
	Teaching And Assessment Methods For Achieving Learning Outcomes:				
Alignment of Learning Outcomes of Knowledge and Understan					
	Alignment of Learning Outcomes of Knowledge an	d Und	lerstanding to Teaching and	Assessment Methods:	
	Alignment of Learning Outcomes of Knowledge and rse Intended Learning Outcomes (CILOs) in	d Und	erstanding to Teaching and ching strategies/methods		
Cou	Alignment of Learning Outcomes of Knowledge and rse Intended Learning Outcomes (CILOs) in Knowledge and Understanding	d Und Tea	lerstanding to Teaching and ching strategies/methods to be used	Assessment Methods:	
Cou	Alignment of Learning Outcomes of Knowledge and rse Intended Learning Outcomes (CILOs) in	d Und Tea	ching strategies/methods to be used etures using board, data	Assessment Methods: Methods of assessment -Written exam	
Cou	Alignment of Learning Outcomes of Knowledge and rse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to:	Tea -Lec	ching strategies/methods to be used tures using board, data ws and multimedia aids.	Assessment Methods: Methods of assessment -Written exam -Practical exam	
Cou	Alignment of Learning Outcomes of Knowledge and Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative	-Lec show - bra	to be used tures using board, data ws and multimedia aids.	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam	
Cou	Alignment of Learning Outcomes of Knowledge and rse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to:	-Lec show - bra - dis	tures using board, data ws and multimedia aids. instorm. cussion.	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes	
Cou	Alignment of Learning Outcomes of Knowledge and Irse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical	-Lec show - bra - dis -Self	to be used tures using board, data vs and multimedia aids. tinstorm. cussion. f-learning by preparing	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes - Report assignments	
comp a1-	Alignment of Learning Outcomes of Knowledge and Irse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance.	-Lec show - bra - dis -Self essa	to be used tures using board, data vs and multimedia aids. tinstorm. cussion. f-learning by preparing y and presentations	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes	
Cou	Alignment of Learning Outcomes of Knowledge and rese Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance. Identify the comparative features of skulls,	-Lec show - bra - dis -Self essa; (con	to be used tures using board, data vs and multimedia aids. tinstorm. cussion. f-learning by preparing	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes - Report assignments	
comp a1-	Alignment of Learning Outcomes of Knowledge and Irse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance. Identify the comparative features of skulls, respiratory, cardiovascular and digestive	-Lec show - bra - dis -Self essa (con -Pradem	to be used tures using board, data vs and multimedia aids. instorm. cussion. f-learning by preparing y and presentations aputer and faculty library) ctical training (Clinical onstrations, practice of	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes - Report assignments	
comp a1-	Alignment of Learning Outcomes of Knowledge and rese Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance. Identify the comparative features of skulls,	-Lec show - bra - dis -Self essa (con -Praddem skill	to be used tures using board, data ws and multimedia aids. tinstorm. cussion. f-learning by preparing y and presentations nputer and faculty library) ctical training (Clinical onstrations, practice of s, and discussions).	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes - Report assignments	
comp a1-	Alignment of Learning Outcomes of Knowledge and Irse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance. Identify the comparative features of skulls, respiratory, cardiovascular and digestive	-Lec show - bra - dis -Self essa (con -Praddem skill	to be used tures using board, data vs and multimedia aids. instorm. cussion. f-learning by preparing y and presentations aputer and faculty library) ctical training (Clinical onstrations, practice of	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes - Report assignments	
comp a1-	Alignment of Learning Outcomes of Knowledge and Irse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance. Identify the comparative features of skulls, respiratory, cardiovascular and digestive system in domestic animals.	-Lec show - bra - dis -Self essa; (con -Pradem skill (a)	to be used tures using board, data vs and multimedia aids. instorm. cussion. f-learning by preparing y and presentations nputer and faculty library) ctical training (Clinical onstrations, practice of s, and discussions). Field visits (farms and	-Written exam -Practical exam -Oral exam - Quizzes - Report assignments - Discussion	
comp a1-	Alignment of Learning Outcomes of Knowledge and Irse Intended Learning Outcomes (CILOs) in Knowledge and Understanding leting this course, students will be able to: Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance. Identify the comparative features of skulls, respiratory, cardiovascular and digestive system in domestic animals.	-Lec show - bra - dis -Self essa (con -Pradem skill (a)	to be used tures using board, data vs and multimedia aids. instorm. cussion. f-learning by preparing y and presentations nputer and faculty library) ctical training (Clinical onstrations, practice of s, and discussions). Field visits (farms and	Assessment Methods: Methods of assessment -Written exam -Practical exam -Oral exam - Quizzes - Report assignments	

Rector of Sana'a University Prof. Dr. Al-Qassim Mohammed Abbas

Assurance Ass. Prof. Dr. Huda Al-Emad

Al-Shawkany

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	villages) (b) General experimental animal teaching (c) Clinical and small group sessions (d) Outpatient clinic	
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(B) Intellectual Skills:						
Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Intellectual skills						
Program Intended Learning Outcomes (Sub- PILOs) in Intellectual skills Course Intended Learning Outcomes (CILOs) o Intellectual Skills						
After	completing this program, students will be able to:	After	completing this course, stude	nts will be able to:		
B1- Competently practices analytical and critical thinking skills in studying and assessing health problems and reading the results of animal medical examinations and in related sciences. b1- Analyze the diversity of knowledge in term of gross anatomical characteristics of each organ and/or structure.						
B2-	Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of sick animal.	b2- Investigate the normal anatomical structures and topography of domestic animals cardiovascular system, muscles, vessels, nerves and brain.				
	Teaching And Assessment Metho	ds F	or Achieving Learnin	g Outcomes:		
	nment of Learning Outcomes of Intellectual Skill		9	ssment Methods:		
Co	urse Intended Learning Outcomes (CILOs) in Intellectual Skills.	Tea	ching strategies/methods to be used	Methods of assessment		
After	completing this course, students will be able to:	-Lectures using board, data		-Written exam		
b1-	Analyze the diversity of knowledge in term of gross anatomical characteristics of each organ and/or structure.	- bra	vs and multimedia aids. instorm. cussion.	-Practical exam -Oral exam - Quizzes		
	Prepared by Quality Assurance Unit		Dean of the Faculty	Academic Development		

Dr. Saleh Alomaisi

Dr. Abdulraqeb Alshami

Ass. Prof. Dr. Abdu Alraoof Al-Shawkany

Center & Quality Assurance Ass. Prof. Dr. Huda Al-Emad

Rector of Sana'a University Prof. Dr. Al-Qassim Mohammed Abbas

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b2 -	Investigate the normal anatomical structures	-Self-learning by preparing	- Report assignments
	and topography of domestic animals	essay and presentations	- Discussion
	cardiovascular system, muscles, vessels,	(computer and faculty	
	nerves and brain.	library)	
		-Practical training (Clinical	
		demonstrations, practice of	
		skills, and discussions).	
		(a) Field visits (farms and	
		villages)	
		(b) General experimental	
		animal teaching	
		(c) Clinical and small group	
		sessions	
		(d) Outpatient clinic	
		(a) suspendent entire	

(C)	Professional and Practical Skills:					
Align	Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Professional and Practical Skills					
	Program Intended Learning Outcomes (Sub- PILOs) in Professional and Practical Skills Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills					
After completing this program, students will be able to:		After	completing this course, students will be able to:			
C1-	Accurately records a comprehensive pathological story of a sick animal including information on healthy behavior and the necessary checks.	c1-	Investigate the normal anatomical features of the visceral organs in different domestic animals.			
C2-	Practicing practical, diagnostic, clinical and research skills, including the collection of samples in various fields of veterinary medicine and related sciences, in a safe and effective manner, taking into account the ethics of the profession.		Participate in the dissection and preparation of specimens of the different visceral organs of domestic animals and different parts of the equine head, neck, thorax, abdomen and pelvis.			
	Teaching And Assessment Methods	For A	Achieving Learning Outcomes:			
Align	ment of Learning Outcomes of Professional and Practical Ski	lls to T	Ceaching and Assessment Methods:			

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Co	ourse Intended Learning Outcomes (CILOs) in Professional and Practical Skills	Teaching strategies/methods to be used	Methods of assessment
After	completing this course, students will be able to:	-Practical training (Clinical demonstrations, practice of	Written exam -Practical exam
c1-	Investigate the normal anatomical features of the visceral organs in different domestic animals.	skills, and discussions).	-Oral exam - Quizzes - Report assignments
c2-	Participate in the dissection and preparation of specimens of the different visceral organs of domestic animals and different parts of the equine head, neck, thorax, abdomen and pelvis.	(b) General experimental animal teaching(c) Clinical and small group sessions(d) Outpatient clinic- Case study	- Discussion

in: General and tcomes (CILOs) in ble skills
vill be able to:
ith animal's owners ation skills and work
ems and how to write related subject to the and internet skills.
Outcomes:
ssment Methods:
thods of assessment
vill rith atio ems rel ano

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	General and Transferable Skills	to be used	
After c	completing this course, students will be able to:	-Self-learning by preparing	-Written exam
		essay and presentations	-Practical exam
d1-	Communicate effectively with animal's owners	(computer and faculty	-Oral exam
	using appropriate communication skills and	library)	- Report assignments
	work in a multidisciplinary team.	- Scientific visits	- Discussion
d2-	Interpret data to solve problems and how to	- discussions	- Note performance
	write report on specific scientific related subject	- Assignments	
	to the course and utilize computers and internet	-	
	skills.		

IV. Course Content:

1 – Course Topics/Items:

a – Theoretical Aspect

Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Number of weeks	Contact hours
1	Body cavities, bony thorax and bony pelvis	a1- a2- b1- b2- c1- c2- d1- d2	Comparative bones of the pelvic limb.	2	4
2	General and comparative anatomy of Urinary system	a1- a2- b1- b2- c1- c2- d1- d2	Urinary organs Kidneys Ureters Urethra	2	4
3	General and comparative anatomy of female genital system	a1- a2- b1- b2- c1- c2- d1- d2	Two ovaries The uterine (Fallopian) tubes The uterus The vagina The vulva The mammary glands	1	2
4	General and comparative	a1- a2- b1- b2-	1-Two testicles	1	2

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	anatomy of male genital system	c1- c2- d1- d2	2- The epididymis 3-Ductus deferentes 4-Seminal glands 5-The male urethra 6-The penis (male copulatory		
5	General and comparative anatomy of Respiratory system	a1- a2- b1- b2- c1- c2- d1- d2	organ). Why we Study the Respiratory System The Major Functions of the Respiratory System Parts of the respiratory system (A). Trachea (B). Cartilage (C). Vocal cord (D). Epiglottis (1) Buccal cavity (2) Nasal Cavity (open to pharynx) (3) Inferior maxillary sinus (4) Superior maxillary sinus (5) Frontal sinuses (6) Guttural pouch (7) Pharynx (8) Trachea (9) Bronchus (10) Alveolus (11) Lungs (12) Larynx	2	4
6	General and comparative anatomy of Digestive system	a1- a2- b1- b2- c1- c2- d1- d2	Mouth (oral cavity) Pharynx Esophagus Stomach Small intestine Large intestine	1	2

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			Pancreas Liver		
7	Cardiovascular system (heart and arteries)	a1- a2- b1- b2- c1- c2- d1- d2	Angiology:- It includes:- 1- Blood vascular system a- Heart b- Arterial vessels c- Venous vessels 2-Lymphatic system a- Lymph-nodes b- Lymph-vessels c- Spleen d- Thymus	1	2
8	nervous system (Functions, neurons, divisions, CNS & PNS) and dissection of the brain sense organs	a1- a2- b1- b2- c1- c2- d1- d2	Divisions of the N.S. It was divided into:- 1. Central (C.N.S.); it includes Brain & spinal cord. 2. Peripheral (P.N.S.); it includes Peripheral spinal nerves. 3. Autonomic (A.N.S.); it is divided into two parts • Sympathetic • parasympathetic	2	4
9	A brief lymphatic system	a1- a2- b1- b2- c1- c2- d1- d2		1	2
10	A brief fish anatomy	a1- a2- b1- b2- c1- c2- d1- d2		1	2
	Number of W	eeks /and Units Per S	Semester	14	28

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	b- Training Aspect:					
Order	Training Tasks	CILOs (symbols)	Number of weeks			
1	Gross a natomy of animals' respiratory system (nostrils, nasal cavity, paranasal sinuses, nasopharynx, larynx, trachea, lungs,	a1- a2- b1- b2-c1- c2- d1- d2	3	6		
2	Dissection of the equine thorax (thoracic cage, muscles, vessels and nerves of the thoracic wall, thoracic cavity	a1, a3, b1, b2, c2, c3, c4, c, d1	2	4		
3	Gross a natomy of equine cardiovascular system (head, neck, heart, coronary arteries, thoracic aorta abdominal aorta)	a1- a2- b1- b2-c1- c2- d1- d2	2	4		
4	dissection of the head & neck	a1- a2- b1- b2-c1- c2- d1- d2	4	8		
5	Dissection of abdomen and pelvis Dissection of abdomen and pelvis	a1- a2- b1- b2-c1- c2- d1- d2	3	6		
	Number of Weeks /and Units Pe	er Semester	14	28		

V	V. Schedule of Assessment Tasks for Students During the Semester:							
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes (CILOs symbols)			
1	Participation quizzes and assignments	1-12	10	10%	a1- a2- b1- b2-c1- c2- d1- d2			
2	Mid-semester exam	7	10	10%	a1- a2- b1- b2-c1- c2- d1- d2			
3	Practice exam	13	20	20%	a1- a2- b1- b2-c1- c2- d1- d2			
5	Oral exam	13	5	5%	a1- a2- b1- b2-c1- c2- d1- d2			

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Final Exam Total	16	55 100	55% 100%	a1- a2- b1- b2-c1- c2- d1- d2
	<u> </u>			u1- u2

VI. Students' Support:	
Office Hours/week	Other Procedures (if any)
Saturday-Wednesday from 8:00 a.m2 p.m.	Student can contact me via email

VII. Learning Resource (MLA style or APA style)s:

1- Required Textbook(s) (maximum two)

Anatomy of the horse, fifth, revised edition (Klaus-Dieter Budras W.O. Sack Sabine Röck, 2009), Schlütersche Verlagsgesellschaft mbH & Co. KG., Hans-Böckler-Alle 7, 30173 Hannover, printed in Germany, ISBN 978-3-89993-044-3.

Dominique Penninck, Marc-André d'Anjou (2015) Atlas of Small Animal Ultrasonography, 2nd Edition Dyce <u>,K. M.</u>, <u>Wolfgang O. Sack</u>, <u>C. J. G. Wensing</u> (2009): Textbook of Veterinary Anatomy, 4e Heide Schatten (2004): <u>Germ Cell Protocols: Volume 1: Sperm and Oocyte Analysis (Methods in Molecular Biology)</u>.

Horst Erich King and Hans-Georg Liebich (2009): <u>Veterinary Anatomy of Domestic Mammals:</u> <u>Textbook and Colour Atlas</u>

Miller's anatomy of the dog, fourth edition (H.E. Evans, A. de-Lahunta, 2011), Saunders elsevier, 3251 Riverport Lane St. Louis, Missouri 63043, ISBN: 978-143770812-7. 8.3.4. Essentials of domestic animal embryology, first edition, (Hyttel, P., Sinowatz, F. and Vejlested, M., 2010), Saunders Elsevier, Edinburgh, London, New York, Oxford,

Philadelphia, St Louis, Sydney, Toronto, ISBN: 978-0-7020-2899-1.

<u>Poul Hyttel</u>, <u>Fred Sinowatz</u>, <u>Morten Vejlsted</u>, <u>Keith Betteridge</u> (2009): Essentials of Domestic Animal Embryology, 1e.

Textbook of veterinary anatomy, fourth edition (K.M. Dyce, C.J.G. Wensing), Saunders elsevier, 3251 Riverport Lane, St. Louis, Missouri, 63043, ISBN: 978-1-4160-6607-1.

Thomas Colville, Joanna M. Bassert (2016) Clinical Anatomy and Physiology for Veterinary Technicians

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Victoria Aspinall and Melanie Cappello (2009): <u>Introduction to Veterinary Anatomy and Physiology</u> <u>Textbook</u>, <u>2e</u>

William O. Reece (2009): Functional Anatomy and Physiology of Domestic Animals.

Recommended Readings and Reference Materials

Anatomy of the horse, fifth, revised edition (Klaus-Dieter Budras W.O. Sack Sabine Röck, 2009), Schlütersche Verlagsgesellschaft mbH & Co. KG., Hans-Böckler-Alle 7, 30173 Hannover, printed in Germany, ISBN 978-3-89993-044-3.

Dominique Penninck, Marc-André d'Anjou (2015) Atlas of Small Animal Ultrasonography, 2nd Edition Dyce , K. M. , Wolfgang O. Sack , C. J. G. Wensing (2009): Textbook of Veterinary Anatomy, 4e Heide Schatten (2004): Germ Cell Protocols: Volume 1: Sperm and Oocyte Analysis (Methods in Molecular Biology).

Horst Erich King and Hans-Georg Liebich (2009): <u>Veterinary Anatomy of Domestic Mammals: Textbook</u> and Colour Atlas

Miller's anatomy of the dog, fourth edition (H.E. Evans, A. de-Lahunta, 2011), Saunders elsevier, 3251 Riverport Lane St. Louis, Missouri 63043, ISBN: 978-143770812-7. 8.3.4. Essentials of domestic animal embryology, first edition, (Hyttel, P., Sinowatz, F. and Vejlested, M., 2010), Saunders Elsevier, Edinburgh, London, New York, Oxford,

Philadelphia, St Louis, Sydney, Toronto, ISBN: 978-0-7020-2899-1.

<u>Poul Hyttel</u>, <u>Fred Sinowatz</u>, <u>Morten Vejlsted</u>, <u>Keith Betteridge</u> (2009): Essentials of Domestic Animal Embryology, 1e.

Textbook of veterinary anatomy, fourth edition (K.M. Dyce, C.J.G. Wensing), Saunders elsevier, 3251 Riverport Lane, St. Louis, Missouri, 63043, ISBN: 978-1-4160-6607-1.

Thomas Colville, Joanna M. Bassert (2016) Clinical Anatomy and Physiology for Veterinary Technicians Victoria Aspinall and Melanie Cappello (2009): <u>Introduction to Veterinary Anatomy and Physiology Textbook</u>, <u>2e</u>

William O. Reece (2009): Functional Anatomy and Physiology of Domestic Animals.

Essential References

Anatomy and physiology of farm animals. 4th ed. (Frandson, R.D., Wilke, W.l. and Fails, A.D., 2003), Lippicott Williams and Wilkins, Awolters Kluwer Company, ISBN: 0-7817-3358-8.

Clinical dissection guide for large animals, horse and large ruminants, 2nd ed. (Constantinescu, G.M. and Constantinescu, I.A., 2004), published by Iowa State Press, ISBN:0-8138-0319-5.

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Anatomy of the dromedary (Smuts, M.S. and Bezuidenhout, A.J., 1987), published by Clarendon press, Oxford, ISBN: 0-19-857188-7.

Anatomy of the horse, an illustrated text, 2nd ed. (Budras, K.D., Sack, W.O. and Röck, S., 1994), Mosby work. Hanover Germany, ISBN: 07234-19213.

Anatomy of the horse, an illustrated text, 2nd edition (Budras, K.D., Sack, W.O. and Röck, S., 1994), published by Mosby work. Hanover Germany, ISBN: 07234-19213.

Atlas anatomy of the horse, (G.A. Swielim, 1997), published by Faculty of veterinary medicine- Cairo, ISBN: 977-19-4770-2.

Bovine anatomy, an illustrated text, 1st ed. (Budras, K.D., Habel, R.E., Wiinsche, A. and Buda, S. 2003), Hanover, Germany, ISBN: 3-89993-000-2.

Clinical dissection guide for large animals, horse and large ruminants, 2nd edition (Constantinescu, G.M. and Constantinescu, I.A., 2004), published by Iowa State Press, ISBN: 0-8138-0319-5.

David G. Smith, Michael P. Schenk (2011) A Dissection Guide and Atlas to the Fetal Pig

Dyce, K. M., Wolfgang O. Sack & C. J. G. Wensing (2002); Textbook of Veterinary Anatomy 3rd edition

Getty, R., 1975/Latest Edition. Sisson and Grossman's. The Anatomy of the Domestic Animals. W.B. Saunders Co. Philadelphia and London.

Geza Zboray- Zsolt Kovacs- Gy6rgy Kriska .

Herzog ,W. (2000); Skeletal Muscle Mechanics: From Mechanisms to Function

Kenneth Kardong (2001); Vertebrates: Comparative Anatomy, Function, and Evolution

Kinga Molnar- Zsolt Palfia (2010) Atlas of Comparative Sectional Anatomy of 6 Invertebrates and 5 Vertebrates

Klaus-Dieter Budras · Patrick H. McCarthy ·, Wolfgang Fricke · Renate Richter (2007) Anatomy of the Dog, 5th revised Editio

Klaus-Dieter Budras · W.O. Sack · Sabine Röck (2011) Anatomy of the Horse, 6th Edition Larry Kimberlin, Alex zur Linden, Lynn Ruoff (2017) Atlas of Clinical Imaging and Anatomy of the Equine Head

McGeady, Quinn, Fitzpatrick and Ryan (2006) Veterinary Embryology

Michael Akers, Michael Denbow (2013) Anatomy and Physiology of Domestic Animals 2nd

EditionLOLA C. HUDSON (2010) Atlas of Feline Anatomy for Veterinarians, 2nd Edition

Miller's anatomy of the dog (Evans, H.E. and Christensen, G.C., 1979), W.B. Saunders

Company, Philadelphia, London, Toronto, Mexico city, Rio de -Janeiro, Sydney and

Tokyo, ISBN:0-7216-3438-9

Nickel, R; Schummer, A., and Seiferle (1979): The locomotor system of the Domestic Mammals. 2nd Ed.

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Verlag Pual Parey Berlin and Hamburg.

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Péter Lőw • Kinga Molnár • György Kriska (2016) Atlas of Animal Anatomy and Histology Poul Maddox-Hyttel et al. (2010); Essentials of domestic animal embryology. Robin Sturtz, DVM (2012) Anatomy and Physiology for Veterinary Technicians and Nurses, A Clinical Approach.

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Electronic Materials and Web Sites etc.

Journals, Websitesetc

Journals

African veterinary anatomy

Anatomia, Histologia, Embryologia - Wiley Online Library

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The Anatomical Record - Wiley Online Library

http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1932-8494

Journal of Anatomy- Wiley Online Library

http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1469-7580

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http://www.vetanat.com/

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http://epubs.icar.org.in/ejournal/index.php/IJVA

International Journal of Animal Anatomy and Physiology

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http://internationalscholarsjournals.org/journal/ijaap

Journal of Advanced Research in Veterinary Science and Technology

http://www.adrpublications.com/Journal-of-Advanced-Research-in-Veterinary-Science-andTechnology.html

Beni-Suef Veterinary Medical journal

http://www.bsuv.bsu.edu.eg/vetmed.aspx#

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JAVMA

International Veterinary Information Services (IVIS).

Vet.net.com

Vanat.cvm.umn.edu.

Pub med.

-Wikipedia

Websites

Anatomical Society of Great Britain and Ireland, http://www.anatsoc.org.uk/

Anatomy museum http://skeletonmuseum.com/

Animals skeletons -www.animalskeletons.net

Canine planar anatomyhttp://vanat.cvm.umn.edu/planar/

Carnivore and developmental anatomy lectureshttp://vanat.cvm.umn.edu/TFFlect.html

Colorado State university online http://www.online.colostate.edu/courses/VS/VS333.dot

Education platformhttp://ivsascove.wix.com/eduplatform#!anatomy-hist-embr/ctsm

Functional anatomy of the horse foot

Gaits: gait foot-fall patterns http://vanat.cvm.umn.edu/gaits/

Google search www.google.com.

http://extension.missouri.edu/xplor/agguides/ansci/g02740.htm

Imaging Anatomy Website http://vetmed.illinois.edu/courses/imaging_anatomy/

Interactive drawings for veterinary anatomistshttp://www.images4u.com/

Interactive Programs for Canine Anatomyhttp://www.tabanat.com

Neuroanatomy correlation labhttp://instruction.cvhs.okstate.edu/neurology/

Online Veterinary Anatomy Museum http://www.onlineveterinaryanatomy.net/

Primate anatomy and physiology http://pin.primate.wisc.edu/aboutp/anat/

Real 3D anatomy http://www.real3danatomy.com/

Rooney's guide to the dissection of the horsehttp://www.vet.cornell.edu/oed/horsedissection/

Sciencedirecthttp://www.sciencedirect.com.

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Pubmed http://www.Pubmed.

Sheep brain atlashttps://www.msu.edu/~brains/brains/sheep/index.html

Sheep brain dissection guidehttp://academic.uofs.edu/department/psych/sheep/

The university of adelaide https://www.adelaide.edu.au/course-outlines/104377/1/sem-1/

VET Veterinary Educational Toolshttp://www.cvmbs.colostate.edu/vetneuro/

Veterinary anatomy courses http://vanat.cvm.umn.edu/vanatCourses/CVM6100.html

Veterinary anatomy http://vetmedicine.about.com/od/anatomy/

Veterinary anatomy museum http://vanat.cvm.umn.edu/museum/

Veterinary anatomy: directions and planeshttp://vanat.cvm.umn.edu/anatDirections/

Veterinary neurobiology laboratory preview/reviewhttp://vanat.cvm.umn.edu/neurolab/

Virtual Canine Anatomyhttp://www.cvmbs.colostate.edu/vetneuro/VCA3/vca.html

2- Other Learning Material:

X.	Course Policies:
1	Class Attendance: MANDATORY TO ATTEND ALL COURSE LECTURES
2	Tardiness: Not allowed at all. Students must be in class or in the practical session 10 minutes prior to the beginning of lectures or practical session
3	Exam Attendance/Punctuality: Attendance is mandatory; absence is accepted with valid excuse
4	Assignments & Projects: All assignments and projects are to be submitted on their due date. Any assignment turned in after the due date will not be accepted without valid and reasonable excuse
5	Cheating: Not tolerated and may lead to EXPELLING the student from the program
6	Plagiarism: Not tolerated AT ALL and may lead to EXPELLING the student from the program
7	Other policies:

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- 1. All devices must be on silent or at least on vibration during lectures/labs
- 2. Before any exam (written, oral) we must check student's identity (student's card, ID, passport). Without any of these documents, the student will not be allowed in the exam room.
- 3. Any of type/ form of cheating is not allowed no matter what.
- **4.** Maintain silence during lectures/exam and disturbance is not allowed. For any questions students should raise their hand and wait for permission to talk.

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Course Plan of Veterinary Anatomy (2)

I Information about Faculty Member Responsible for the Course:							
Name of Faculty Member	Dr. Saleh Ahmed Mohammed Ali Alomaisi	Office Hours					
Location & Telephone No.	Sana'a, Thamar Governorate 776017635	SAT	SUN	MON	TUE	WED	THU
E-mail	alomisy78@gmail.com alomisy78@yahoo.com	8am 2pm	8am 2pm	8am 2pm	8am 2pm	8am 2pm	

I	I. Course Identification and General Information:							
1	Course Title:	Veterinary Anatomy (2)						
2	Course Number & Code:	ANT232						
		С.Н				Total		
3	Credit hours:	Theoretical	Practical	Training	Seminar	Total		
		2	2			4		
4	Study level/ semester at which this course is offered:	s Second Year: Second Semester						
5	Pre -requisite (if any):	ANT231						
6	Co –requisite (if any):							
7	Program (s) in which the course is offered:	s Bachelor Veterinary Medicine						
8	Language of teaching the course:	English						
9	System of Study:	Regular / Semesters						
10	Mode of delivery:	Lectures and Practical						
11	Location of teaching the course:	Faculty of Ve	terinary Med	licine Buildi	ng			

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II. Course Description:

The course aimed to provide the student with knowledge and skills in the comparative and applied anatomy in the domestic animals

This course covers the pleura and its reflection, respiratory, urinary, male and female genital in addition to the anatomy of nervous system, lymphatic.

The knowledge about normal shape, form and structure of animals in male and female to differentiate between the diseased cases and application of the anatomical facts with the clinical sciences

Understanding of veterinary anatomy fundamentals, beginning with blood vessels of head and neck, nervous system and special anatomy of the sense organs.

II. Intended learning outcomes (ILOs) of the course:

After completing this course, students will be able to:

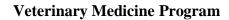
- **a1.** Explain the general and comparative anatomical structures and topography of different body cavities and systems organs with special references to their clinical significance.
- **a2.** Identify the comparative features of skulls, respiratory, cardiovascular and digestive system in domestic animals.
- **b1.** Analyze the diversity of knowledge in term of gross anatomical characteristics of each organ and/or structure.
- **b2.** Investigate the normal anatomical structures and topography of domestic animals cardiovascular system, muscles, vessels, nerves and brain.
- **c1.** Investigate the normal anatomical features of the visceral organs in different domestic animals.
- **c2.** Participate in the dissection and preparation of specimens of the different visceral organs of domestic animals and different parts of the equine head, neck, thorax, abdomen and pelvis.
- **d1.** Communicate effectively with animal's owners using appropriate communication skills and work in a multidisciplinary team.
- **d2.** Interpret and transcribe data to solve problems and how to write report on specific scientific related subject to the course and utilize computers and internet skills.

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X. Course Content:

A – Theoretical Aspect:

Order	Topics List	Week Due	Contact Hours
1	Body cavities, bony thorax and bony pelvis	1-2	4
2	General and comparative anatomy of Urinary system	3-4	4
3	General and comparative anatomy of female genital system	5	2
4	General and comparative anatomy of male genital system	6	2
5	General and comparative anatomy of Respiratory system	7	2
6	Mid-Term Exam	8	2
7	General and comparative anatomy of Digestive system	9-10	4
8	Cardiovascular system (heart and arteries)	11	2
9	nervous system (Functions, neurons, divisions, CNS & PNS) and dissection of the brain sense organs	12-13	4
10	A brief lymphatic system	14	2
11	A brief fish anatomy	15	2
12	Final Exam	16	2
	Number of Weeks /and Units Per Semester	16	32

	b- Training Aspect:		
Order	Training Tasks	Week Due	Contact hours
1	Gross a natomy of animals' respiratory system (nostrils, nasal cavity, paranasal	1-3	6

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	sinuses, nasopharynx, larynx, trachea, lungs,		
2	Dissection of the equine thorax (thoracic cage, muscles, vessels and nerves of the thoracic wall, thoracic cavity	4-5	4
3	Gross a natomy of equine cardiovascular system (head, neck, heart, coronary arteries, thoracic aorta abdominal aorta)	6-7	4
4	Mid-Term Exam	8	2
5	Dissection of the head & neck	9,10,11,12	8
6	Dissection of abdomen and pelvis Dissection of abdomen and pelvis	13,14,15	6
7	Final Exam	16	2
	Number of Weeks /and Units Per Semester	16	32

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KI. Teaching strategies of the course:

- Lectures using board, data shows and multimedia aids.
- Self-learning by preparing essay and presentations (computer and faculty library)
- Brainstorm
- Discussion
- Cooperative learning
- Practical training (Clinical demonstrations, practice of skills, and discussions).
 - (a) Field visits (farms and villages)
 - (b) General experimental animal teaching
 - (c) Clinical and small group sessions
 - (d) Outpatient clinic
- Tutorial classes (small group teaching)

II. Assessment Methods:

- -Written exam
- -Practical exam
- -Oral exam
- -Quizzes
- Report assignments
- Discussion

No.	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	Participation quizzes and	1-12	10	10%

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	assignments			
2	Mid-semester exam	7	10	10%
3	Practice exam	13	20	20%
4	Oral exam	13	5	5%
5	Final Exam	16	55	55%
	Total		100	100%

II. Learning Resource (MLA style or APA style)S:

1- Required Textbook(s) (maximum two)

Anatomy of the horse, fifth, revised edition (Klaus-Dieter Budras W.O. Sack Sabine Röck, 2009), Schlütersche Verlagsgesellschaft mbH & Co. KG., Hans-Böckler-Alle 7, 30173 Hannover, printed in Germany, ISBN 978-3-89993-044-3.

Dominique Penninck, Marc-André d'Anjou (2015) Atlas of Small Animal Ultrasonography, 2nd Edition Dyce <u>,K. M.</u>, <u>Wolfgang O. Sack</u>, <u>C. J. G. Wensing</u> (2009): Textbook of Veterinary Anatomy, 4e Heide Schatten (2004): <u>Germ Cell Protocols: Volume 1: Sperm and Oocyte Analysis (Methods in Molecular Biology)</u>.

Horst Erich King and Hans-Georg Liebich (2009): <u>Veterinary Anatomy of Domestic Mammals: Textbook and Colour Atlas</u>

Miller's anatomy of the dog, fourth edition (H.E. Evans, A. de-Lahunta, 2011), Saunders elsevier, 3251 Riverport Lane St. Louis, Missouri 63043, ISBN: 978-143770812-7. 8.3.4. Essentials of domestic animal embryology, first edition, (Hyttel, P., Sinowatz, F. and Vejlested, M., 2010), Saunders Elsevier, Edinburgh, London, New York, Oxford,

Philadelphia, St Louis, Sydney, Toronto, ISBN: 978-0-7020-2899-1.

<u>Poul Hyttel</u>, <u>Fred Sinowatz</u>, <u>Morten Vejlsted</u>, <u>Keith Betteridge</u> (2009): Essentials of Domestic Animal Embryology, 1e.

Textbook of veterinary anatomy, fourth edition (K.M. Dyce, C.J.G. Wensing), Saunders elsevier, 3251 Riverport Lane, St. Louis, Missouri, 63043, ISBN: 978-1-4160-6607-1.

Thomas Colville, Joanna M. Bassert (2016) Clinical Anatomy and Physiology for Veterinary Technicians Victoria Aspinall and Melanie Cappello (2009): <u>Introduction to Veterinary Anatomy and Physiology Textbook</u>, 2e

William O. Reece (2009): Functional Anatomy and Physiology of Domestic Animals.

Recommended Readings and Reference Materials

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William O. Reece (2009): Functional Anatomy and Physiology of Domestic Animals.

Essential References

Anatomy and physiology of farm animals. 4th ed. (Frandson, R.D., Wilke, W.l. and Fails, A.D., 2003), Lippicott Williams and Wilkins, Awolters Kluwer Company, ISBN: 0-7817-3358-8.

Clinical dissection guide for large animals, horse and large ruminants, 2nd ed. (Constantinescu, G.M. and Constantinescu, I.A., 2004), published by Iowa State Press, ISBN:0-8138-0319-5.

Anatomy of the dromedary (Smuts, M.S. and Bezuidenhout, A.J., 1987), published by Clarendon press, Oxford, ISBN: 0-19-857188-7.

Anatomy of the horse, an illustrated text, 2nd ed. (Budras, K.D., Sack, W.O. and Röck, S., 1994), Mosby work. Hanover Germany, ISBN: 07234-19213.

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Bovine anatomy, an illustrated text, 1st ed. (Budras, K.D., Habel, R.E., Wiinsche, A. and Buda, S. 2003), Hanover, Germany, ISBN: 3-89993-000-2.

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Herzog ,W. (2000); Skeletal Muscle Mechanics: From Mechanisms to Function Kenneth Kardong (2001); Vertebrates: Comparative Anatomy, Function, and Evolution Kinga Molnar- Zsolt Palfia (2010) Atlas of Comparative Sectional Anatomy of 6 Invertebrates and 5 Vertebrates

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Company, Philadelphia, London, Toronto, Mexico city, Rio de -Janeiro, Sydney and Tokyo, ISBN:0-7216-3438-9

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Robin Sturtz, DVM (2012) Anatomy and Physiology for Veterinary Technicians and Nurses, A Clinical Approach.

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Victoria Aspinall, Melanie Cappello (2004); Introduction to Veterinary Anatomy & Physiology

Electronic Materials and Web Sites etc.

Journals, Websitesetc

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http://internationalscholarsjournals.org/journal/ijaap

Journal of Advanced Research in Veterinary Science and Technology

http://www.adrpublications.com/Journal-of-Advanced-Research-in-Veterinary-Science-

andTechnology.html

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Beni-Suef Veterinary Medical journal

http://www.bsuv.bsu.edu.eg/vetmed.aspx#

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Vet.net.com

Vanat.cvm.umn.edu.

Pub med.

-Wikipedia

Websites

Anatomical Society of Great Britain and Ireland, http://www.anatsoc.org.uk/

Anatomy museum http://skeletonmuseum.com/

Animals skeletons -www.animalskeletons.net

Canine planar anatomyhttp://vanat.cvm.umn.edu/planar/

Carnivore and developmental anatomy lectureshttp://vanat.cvm.umn.edu/TFFlect.html

Colorado State university online http://www.online.colostate.edu/courses/VS/VS333.dot

Education platformhttp://ivsascove.wix.com/eduplatform#!anatomy-hist-embr/ctsm

Functional anatomy of the horse foot

Gaits: gait foot-fall patterns http://vanat.cvm.umn.edu/gaits/

Google search www.google.com.

http://extension.missouri.edu/xplor/agguides/ansci/g02740.htm

Imaging Anatomy Website http://vetmed.illinois.edu/courses/imaging_anatomy/

Interactive drawings for veterinary anatomistshttp://www.images4u.com/

Interactive Programs for Canine Anatomyhttp://www.tabanat.com

Neuroanatomy correlation labhttp://instruction.cvhs.okstate.edu/neurology/

Online Veterinary Anatomy Museum http://www.onlineveterinaryanatomy.net/

Primate anatomy and physiology http://pin.primate.wisc.edu/aboutp/anat/

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Rooney's guide to the dissection of the horsehttp://www.vet.cornell.edu/oed/horsedissection/

Sciencedirecthttp://www.sciencedirect.com.

Pubmed http://www.Pubmed.

Sheep brain atlashttps://www.msu.edu/~brains/brains/sheep/index.html

Sheep brain dissection guidehttp://academic.uofs.edu/department/psych/sheep/

The university of adelaide https://www.adelaide.edu.au/course-outlines/104377/1/sem-1/

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	VET Veterinary Educational Toolshttp://www.cvmbs.colostate.edu/vetneuro/					
	Veterinary anatomy courses http://vanat.cvm.umn.edu/vanatCourses/CVM6100.html					
	Veterinary anatomy http://vetmedicine.about.com/od/anatomy/					
	Veterinary anatomy museum http://vanat.cvm.umn.edu/museum/					
	Veterinary anatomy: directions and planeshttp://vanat.cvm.umn.edu/anatDirections/					
	Veterinary neurobiology laboratory preview/reviewhttp://vanat.cvm.umn.edu/neurolab/					
	Virtual Canine Anatomyhttp://www.cvmbs.colostate.edu/vetneuro/VCA3/vca.html					
2- Other Learning Material:						

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2	Tardy:							
	Not allowed at all. Students must be in class 10 minutes prior to the beginning of lectures							
3	Exam Attendance/Punctuality:							
	Attendance is mandatory; absence is accepted with valid excuse							
4	Assignments & Projects:							
	All assignments and projects are to be submitted on their due date. Any assignment turned in after							
	the due date will not be accepted without valid and reasonable excuse.							
5	Cheating: Not tolerated and may lead to EXPELLING the student from the program							
6	Plagiarism:							
	Not tolerated AT ALL and may lead to EXPELLING the student from the program							
7	Other policies:							
	1. All devices must be on silent or at least on vibration during lectures/labs.							
	2. Before any exam (written, practical, oral) student's identity will be checked (student's							
	card, ID, passport). Without any of these documents, the student will not be allowed in the							
	exam room.							
	3. Any of type/ form of cheating is not allowed no matter what.							
	4. Maintain silence during lectures and disturbance is not allowed.							

Prepared by Dr. Saleh Alomaisi

Quality Assurance Unit Dr. Abdulraqeb Alshami

Dean of the Faculty Ass. Prof. Dr. Abdu Alraoof Al-Shawkany

Faculty Of Veterinary Medicine

Veterinary Medicine Program









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