Course Schedule – November 2016 – April 2017

Department : ZOOLOGY

Name/s of the Faculty : Dr. Rita Jayaraj (2hrs) & Dr. S A Vidhya (2hrs)

Course Title : CHORDATA

Course Code : 15ZL/MC/CH24

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Introduction, Discussion of Syllabus Unit 1 Broad outline of Prochordates General features Type study – Amphioxus Unit 3 Amphibia - Outline classification Neoteny in Urodela.	Class room Method	Ekambaranatha Ayyar	Questions on topics
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Petromyzon - type study Affinities of Petromyzon Parental care in Amphibia	Class room Method Class room Method	Jordan &Verma Kotpal	Self Study Discussion

Nov. 29 – Dec 5,	Introduction to Super		Jordan &Verma	
2016	Class Pisces		Kotpal	Discussion
(Day Order 1 to 6)	Type study – Scoliodon			Self Study
	Reptilia : Characteristic features Type : Calotes versicolor	PPT	Jordan &Verma Kotpal	Discussion
Dec 6 - 14, 2016	Air bladder and accessory respiratory	Class room	Kotpal	Comprehension
(Day Order 1 to 6)	organs in Fishes	Method	Jordan &Verma	
	Type: Calotes			
	versicolor – Cont'd			
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 2	Chalk and talk	Ekambaranatha Ayyar	Questions
	Introduction to Super Class Pisces			
	Type study – Scoliodon			
	Unit 4			
	Aves : Characteristic features		Jordan &Verma	Questions
	Type: Columba livia		Kotpal	
	External features			
Ion 02 00 2017	Aggregative Description	Class	Elzambaranatha	Comprehensies
Jan. 03- 09, 2017 (Day Order 1 to 6)	Accessory Respiratory Organs, Parental care,	Class room Method	Ekambaranatha Ayyar	Comprehension
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	electric organs				
	Type: Columba livia	PPT			
	-Continued				
Jan. 10- 17, 2017	Unit 2	Class room	Ekambaranatha	Comprehension	
(Day Order 1 to 6)		Method	Ayyar	Assignment	
	Accessory Respiratory			Submission	
	Organs, Parental care,	PPT			
	Type: Columba livia				
	-Continued				
Jan. 18- 20, 2017	Unit 2	Chalk and talk	Ekambaranatha	Questions	
(Day Order 1 to 3)			Ayyar		
	Pisces - electric organs				
	Study of endoskeleton				
	in birds				
Jan.23 - 28, 2017		C.A. 7	 		
Jan.30 – Feb 01,	Pigeon - type study Class room Jordan Questions on				
2017	1 igeon - type study	Method		topics	
			Kotpal	1	
(Day Order 4 to 6)					
Feb.02 - 09, 2017	Skull in reptiles as basis of classification.	PPT	Jordan &Verma	Discussion	
(Day Order 1 to 6)	basis of classification.		Kotpal		

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Feb.10 - 17, 2017	Snakes of South India			
(Day Order 1 to 6)	Poison apparatus			
	Mammalia :	Class room	Jordan	Questions on
	Characteristic features	Method	Kotpal	topics
	Type: Oryctolagus			•
	cuniculus			
	External features			
Feb.20 - 27, 2017	Endoskeleton of	Chalk and talk	Ekambaranatha	Questions
(Day Order 1 to 6)	Mammalia		Ayyar	Third
	Type: Oryctolagus		1 1 3 3 41	
	cuniculus			Component
				Quiz
			Jordan &Verma	
			Kotpal	
				Questions
Feb.28 – Mar 07,	Dentition in Mammals	Chalk and Talk	Kotpal RL	Discussion
			Kotpai KL	Discussion
2017	Affinities of	method		
(Day Order 1 to 6)	Amphioxus &			
	Cyclostomata			
Mar. 06 - 16, 2017		C.A.IMPROVE	MENT TESTS	
Mar. 08 - 15, 2017	Retrogressive	Powerpoint	Ekambaranatha	Recapitulation
(Day Order 1 to 6)	metamorphosis in	presentation	Ayyar	
	Urochordata			
	Aquatic Mammals			
Mar. 16, 2017	Revision			
(Day Order 1)				
Mar. 17 - 23, 2017		I	1	
(Day Order 2 to 6)		REVIS	SION	
March 24, 2017				
(Day Order 1)				
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Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr Juliana Joe (2 hrs) and Dr Preethi Jeyakumar (2 hrs)

Course Title : General Zoology II

Course Code : 15ZI/AC/GZ24

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 10 2016	Unit 1			
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Unit 1 Discussion of Syllabus Introduction to culture of economically important species Apiculture – Morphology and social organization of Apis indica	Interaction Lecture	Economic Zoology - Shukla and Upadhyay	Discussion
	Unit 4 Introduction to Genetics Human Chromosomes Sex Determination in human		Concepts of Genetics by Klug	
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Equipment and tools needed to set up an apiary. Pisciculture Culture of Indian Major carp-Catla	Interaction Lecture	Economic Zoology - Shukla and Upadhyay	Questioning
	Catla Unit 4 Aneuploidy in human	PPT	Concepts of Genetics by Klug	

Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Culture of Indian Major carp (contd.) By products of the fishing industry	Lecture	Fish & fisheries – Shanmugam	Discussion
Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 2 Human pathogens Introduction Disease Cycle Diseases: Viral: AIDS Hepatitis Unit 4	Lecture PPT	Microbiology – Sharma Text book of Microbiology – Dubey and Maheshwari	Small Test
	Multiple allelic inheritance: Eg. Human blood groups (A, B, AB and O), Rh factor, Inheritance and significance	Problem Solving	Concepts of Genetics by Klug	
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 2 Bacterial diseases- Tuberculosis Cholera	Lecture PPT	Microbiology – Sharma	
	Unit 4 Polygenic Inheritance: Eg. Skin colour in man – Lethal genes: Eg. Tay – Sach's disease		Concepts of Genetics by Klug	

Jan. 03- 09, 2017	Protozoan	Lecture	Microbiology -	Third
(Day Order 1 to 6)	diseases - Amoebiasis Life cycle of Entamoeba histolytica	ОНР	Sharma Text book of Microbiology – Dubey and Maheshwari A manual of	Component Scrap Book Submission
	Unit 4 Hereditary diseases: Albinism, Huntington disease, Haemophilia, Kearns - Sayre Syndrome & Lactose intolerance	Group Discussion	zoology Vol I – Ekambaranath Iyer Concepts of Genetics by Klug	
Jan. 10- 17, 2017 (Day Order 1 to 6)	Malaria Life Cycle of Plasmodium Unit 4 Genetic Counselling	Lecture OHP Guest Lecture	Microbiology – Sharma Text book of Microbiology – Dubey and Maheshwari A manual of	Small Test
	Unit 5 Introduction to Animal Behavior		zoology Vol I – Ekambaranath Iyer Animal Behaviour by Reena Mathur,	
Jan. 18- 20, 2017 (Day Order 1 to 3)	Unit 2 Helminthic disease: Filariasis Enterobiosis	Lecture	Microbiology – Sharma Text book of Microbiology – Dubey and Maheshwari	Quiz
Ion 22 28 2017	Unit 5 Shelter seeking and construction	CAT	Animal Behaviour by Reena Mathur	
Jan.23 - 28, 2017		C.A. To	ests	

Jan.30 – Feb 01, 2017	Unit 3	Lecture	Chordate	Diagram Test
(Day Order 4 to 6)	Development biology Introduction Gametogenesis- Spermatogenesis	ОНР	Embryology – Verma & Agarwal	
	Unit 5 Animal associations: Commensalism, Mutualism,		Animal Behaviour by Reena Mathur	
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 3 Oogenesis Types of vertebrate eggs	Lecture OHP	Chordate Embryology – Verma & Agarwal	Questioning
	Unit 5 Parasitism and Predation		Animal Behaviour by Reena Mathur	
Feb.10 - 17, 2017	Unit 3 Phases of	Lecture	Chordate Embryology –	Diagram test
(Day Order 1 to 6)	development – Cleavage- Types	ОНР	Verma & Agarwal	
	Unit 5 Behaviour and reproduction: Courtship behaviour		Animal Behaviour by Reena Mathur	
Feb.20 - 27, 2017	Unit 3 Blastulation in	Lecture	Chordate Embryology –	Third
(Day Order 1 to 6)	Frog Gastrulation in Frog	ОНР	Verma & Agarwal	Component Quiz
	Unit 5 Parental care		Animal Behaviour by Reena Mathur	

Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 3 Placentation in mammals Unit 5 Learning Behaviour: Forms of learning	Lecture OHP	Chordate Embryology – Verma & Agarwal Animal Behaviour by Reena Mathur	
Mar. 6 - 16, 2017		C.A. IMPROVEN	MENT TESTS	
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 3 Assisted reproductive technology Unit 5 Abnormal behaviour in domestic and zoo animals	Lecture OHP	Chordate Embryology – Verma & Agarwal Animal Behaviour by Reena Mathur	Diagram test
Mar. 16, 2017 (Day Order 1)	Unit 3 In Vitro fertilization & bioethical issue	Lecture LCD	Chordate Embryology – Verma & Agarwal	Comprehension
Mar. 17 - 23, 2017 (Day Order 2 to 6) March 24, 2017 (Day Order 1)		REVIS	ION	

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Kalpana Jayaraman (2 hrs.)

Course Title : Environmental Sciences

Course Code : 15ZL/GC/ES22

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Introduction Unit1 Components of the environment-classification of resources- Renewable and non-renewable resources	Power Point & Chalk and Talk	Environmental biology- Singh, H.R	Questioning
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Need for Public awareness in conservation Energy flow in ecosystems	Powerpoint Presentation Small experiment to depict energy flow	Environmental Biology- Sharma	Small quiz
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Aquatic and terrestrial- food chain and food web	Lecture	Fundamentals of Ecology- Odum	Questioning
Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 2 Types of pollution-Airwater-solid waste, noise	Lecture and Discussion on various types of pollution Powerpoint Presentation	Textbook on Environmental Studies – Bharucha. E	Objective test
Dec. 15 - 21, 2016	Unit 2 Greenhouse effect-	Powerpoint Presentation	Textbook on Environmental Studies –	Presentations on threats to

(Day Order 1 to 6)	depletion of ozone –		Bharucha. E	environment
Jan. 03- 09, 2017 (Day Order 1 to 6)	Unit 2 What is Biodiversity?	Powerpoint Presentation	Textbook on Environmental Studies – Bharucha. E	Discussion
Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 2 Loss of biodiversity- threats	Lecture Powerpoint Presentation	Textbook on Environmental Studies – Bharucha. E	Case Studies CA Test
Jan. 18- 20, 2017 (Day Order 1 to 3)	Unit 2 Population-urbanization- poverty Agriculture and industry-deforestation	Lecture	Textbook on Environmental Studies – Bharucha. E	Discussion
Jan.23 - 28, 2017		C.A	. Tests	
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 2 Use, Misuse and Abuse of resources Consequences of environmental problems Unit 3 Environmental disasters-Bhopal Gas tragedy Chernobyl accident	Powerpoint Presentation	Textbook on Environmental Studies – Bharucha. E Internet Sources on Environmental Disasters	Discussion
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 3 Fukushima Nuclear Crisis Gulf War Love canal Episode	Powerpoint Presentation	Internet Sources on Environmental Disasters	Discussion
Feb.10 - 17, 2017 (Day Order 1 to 6)	Unit 3 Tsunami-Volcanic eruptions Methods-to measure and check environmental degradation-carbon footprint Carbon credit- ecological methods	Lecture	Textbook on Environmental Studies – Bharucha. E	Discussion and questioning
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 3 Environmental movements in India Chipko movement	Powerpoint Presentation	Internet sources on environmental movements in India	Third Component Quiz

	Narmada movement			
Feb.28 – Mar 07,	Unit 3 Sethusamudram Project	Powerpoint Presentation		Doganitulation
2017	Environmental acts-	Lecture		Recapitulation
(Day Order 1 to 6)	policy measures with respect to India	Discussion	Journals	
Mar. 06 - 16, 2017		C.A. IMPROV	EMENT TESTS	
Mar. 08 - 15, 2017	Unit 3	Lecture	References from	
(Day Order 1 to 6)	Policy measures with respect to India	Discussion	International Articles and recent information	
	International environmental agreement –Stockholm Conference		Catalogues and relevant Journals	Quiz
Mar. 16, 2017 (Day Order 1)	Unit 3 Montreal protocol-RIO Meet Kyoto conference-UN conference on climate change	Lecture	Journals	Questioning
Mar. 17 - 23, 2017				
(Day Order 2 to		REV	ISION	
6)				
March 24, 2017				
(Day Order 1)				

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Vidhya S.A. (3 hours)

Course Title : Applied Zoology
Course Code : 15ZL/GE/AZ23

Week & No. of	Units & Topics	Teaching	Text &	Method of
hours		Methodology	References	Evaluation
Nov. 14 - 19, 2016	Introduction, detailed	Observation	A Textbook of	Questioning
(Day Order 1 to 6)	outline of the syllabus and	of the tools and	Applied Zoology	
	course, significance as a	equipment	– Tomer B.S. and	
	skill development course,	used to set up an apiary	Bhatnagar M.C.	
	career options	, ,	Handbook of	
	Unit 1	Powerpoint	Economic	
	Apiculture: Different	presentation	Zoology – Ahsan	
	species – social organisation		J. and Sinha S. P.	
	– equipment and tools		Economic	
	required for setting up an		Zoology – Shukla	
	apiary		G. S. and	
			Upadhyay V. B.	
Nov. 21 - 28, 2016	Unit 1	Lecture with	Economic	Objective Test
(Day Order 1 to 6)	Bee products: Honey,	realia – honey	Zoology – Shukla	
	Beeswax and Bee Venom –	and beeswax	G. S. and	
	Testing of purity of honey	products	Upadhyay V. B.	
Nov. 29 – Dec 5,	Unit 1	Lecture	International	Discussion
2016	Sericulture: Different types		Sericultural	
(Day Order 1 to 6)	of silk – Life history of	Video	Commission -	
	Bombyx mori		http://inserco.org	

	Rearing and Post Cocoon		Economic	
	Treatment – Economic		Zoology – Shukla	
	Importance		G. S. and	
			Upadhyay V. B.	
Dec 6 - 14, 2016	Unit 1	Chalk and talk	A Textbook of	Questioning
(Day Order 1 to 6)	Lac culture – Processing of	with realia –	Applied Zoology	
	lac – Economic importance	lac products	– Tomer B.S. and	
			Bhatnagar M.C.	
Dec. 15 - 21, 2016	Unit 2	Realia –	Economic	Diagram test
(Day Order 1 to 6)	Economic Importance of	preserved	Zoology – Shukla	
	Crab, Prawn, Lobster,	specimens	G. S. and	
	Edible and Pearl Oyster		Upadhyay V. B.	
Jan. 03- 09, 2017	Unit 2	Charts,	http://www.fao.or	Class discussion
(Day Order 1 to 6)	Fish Culture: Management	photographs,	g/fishery/en	
	of Fish Farm	diagrams	Fish and	
		showing	Fisheries of India	
		breeding	– Jhingran V. G.	
		techniques		
Jan. 10- 17, 2017	Unit 2	Observation	http://www.fao.or	Class discussion
(Day Order 1 to 6)	Ornamental Fish – Setting	of a real	g/fishery/en	
	up and maintenance of	aquarium	Fish and	
	Aquarium/Fish Tank		Fisheries of India	
			– Jhingran V. G.	
Jan. 18- 20, 2017	Unit 3	Realia –	Economic	Objective test
(Day Order 1 to 3)	Medicinal Significance of	sponges,	Zoology – Shukla	
	Animal and Animal	corals and	G. S. and	
	Products: Sponges, Corals	shells	Upadhyay V. B.	
	and Shells.			
Jan.23 - 28, 2017		C.A. T	Cest	<u> </u>
Jan.30 – Feb 01,	Unit 3	Powerpoint	Economic Zoology	Objective test
2017	Medicinal Significance of	presentation	– Shukla G. S. and	
(Day Order 4 to 6)	Animal and Animal		Upadhyay V. B.	

	Products: Leech Therapy,			
	Scorpion Venom, Bee			
	Venom, Fish Liver Oil and			
	Snake Venom			
Feb.02 - 09, 2017	Unit 3	Chalk and	Economic Zoology	Discussion on
(Day Order 1 to 6)	Leather – Economic	talk	– Shukla G. S. and	occupational
	Importance		Upadhyay V. B.	hazards in the
				leather industry
Feb.10 - 17, 2017	Unit 4	Lecture	Economic Zoology	Objective test
(Day Order 1 to 6)	Poultry farming: Different	with	– Shukla G. S. and	Assignment
	Breeds of Fowls in India –	photographs	Upadhyay V. B.	Submission
	Housing and Rearing –	Visit to		(Third
	Economic Importance	Poultry/		Component)
		Dairy/ Fish		
		farm		
Feb.20 - 27, 2017	Unit 4	Chalk and	Economic Zoology	III component quiz
(Day Order 1 to 6)	Dairy Farming: Milk and	talk	– Shukla G. S. and	- February 20,
	Milk Products		Upadhyay V. B.	2016
Feb.28 -Mar 07,	Unit 4	Powerpoint	Economic Zoology	Discussion
2017 (Day Order 1	Testing of Milk – Biogas	presentation	– Shukla G. S. and	
to 6)	(Gobar Gas)		Upadhyay V. B.	
Mar. 06 - 16, 2017	C.	A. IMPROVE	MENT TESTS	<u> </u>
Mar. 08 - 15, 2017	Unit 5	Chalk and	The Earthworm	Questioning
(Day Order 1 to 6)	Vermitechnology:	talk with	Book – Sultan	
	Vermiculture –	realia – live	Ahmed Ismail	
	Vermicomposting and	and		
	Vermiwash	preserved		
		specimens		
Mar. 16, 2017	Unit 5	Workshop	The Earthworm	Objective test
(Day Order 1)	Vermitechnology:	on setting	Book – Sultan	
	Applications in organic	up a	Ahmed Ismail	
	farming	vermipit		

Mar. 17 - 23, 2017	
(Day Order 2 to 6)	REVISION
March 24, 2017	
(Day Order 1)	

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Kalpana Jayaraman (2 hrs.)

Course Title : Concepts in Animal Welfare

Course Code : 15ZL/GE/AW22

Week & No. of hours	Units & Topics	Teaching Methodolo gy	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Unit 1 Animal Welfare – Introduction and Behavioral Indicators Syllabus Science, Ethics and Law Mental, Physical and Natural Assessment – Five Freedoms Concept of needs	Lecture	WSPA – World Society for the Protection of Animals	Discussion
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Factors that contribute to animal behavior and Welfare Animal Behaviour Animal choices	Lecture	WSPA - Concepts in Animal Welfare	Questioning Discussion
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Recognition of normal behavior Possible causes of abnormal behavior of animals in Wild, Zoo, Domestic Animals and Pets Contributions of animals to human society Cultural and historical influences	Lecture Discussion	WSPA - Concepts in Animal Welfare	Discussion
Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 1 Wildlife, Companion animals Research animals Farm or food animals	Lecture Discussion	WSPA - Concepts in Animal Welfare	Questioning
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 1 Pet Animals Relationship between animal abuse and human violence	Lecture Discussion	WSPA - Concepts in Animal Welfare	Small Quiz Written Test

Jan. 03- 09, 2017 (Day Order 1 to 6)	Unit 2 Ethical concerns Exploitation of animals Wildlife trade Turtle trade Fur trade – mink Bear farms Whaling Leather trade	Powerpoint Presentation	WSPA - Concepts in Animal Welfare	Presentation by students (Third Component)
Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 2 Wildlife trade Snake skin trade Exotic pet trade Animals in sport/entertainment Jallikattu, Rekla, Hunting Angling	Lecture Powerpoint Presentation	WSPA - Concepts in Animal Welfare	Questioning Presentation by students
Jan. 18- 20, 2017 (Day Order 1 to 3)	Unit 2 Animals in sport/entertainment Horse races, Circuses, Horse and elephant polo, Cock fight, Insect fight, Spider fight	Lecture Powerpoint Presentation	WSPA - Concepts in Animal Welfare	Questioning
Jan.23 - 28, 2017		C.A. Tests		
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 2 Animals used for education and research Regulatory tests using animals Drug testing Toxicology testing – LD50, Draize test Endocrine Disruptor Screening	Lecture	The Principle of Humane Experimental Technique – Russel and Burch Alternatives to Animal Testing – ALTWEB	Discussion
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 2 Animals used for education and research Cosmetic product testing Eye irritation, Skin irritation Skin corrosion, Photo toxicity Photo irritation, Percutaneous absorption Cruelty Free products Animal Care Careers Case studies	Lecture	WSPA - Concepts in Animal Welfare Alternatives to Animal Testing – ALTWEB	CA TEST

Feb.10 - 17, 2017 (Day Order 1 to 6)	Unit 2 Behavioural assessment of animal pain Animal suffering Dairy cows and veal calves Egg-laying hens and chickens bred for meat Transport towards death Slaughter and death	Guest Lecture	Pain in birds – Gentle Animal suffering in the broiler industry – COK report Assessing pain in animals – Rutherford	Discussion
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 3 Animal welfare – national and international legislations: Introduction – CITES AATA IATA Animal protection laws – Animal Welfare Act Prevention of Cruelty to Animals Act Wildlife Act The Wildlife (Protection) Amendment Act	Lecture	World Wide Web	Questioning
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 3 Animal welfare – national and international legislations: Animal Welfare Organizations - Blue Cross, SPCA, WSPA, PETA Animal Welfare Board of India, PFA, The International Fund for Animal Welfare (IFAW), CPCSEA	Guest Lecture	World Wide Web	Questioning
Mar. 06 - 16, 2017	C.A. IN	IPROVEME	NT TESTS	
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 3 Humane approach to animals Alternatives to animal testing 3Rs – Reduction, Refinement, Replacement Use of alternative methods Use of alternatives in education	Lecture	World Wide Web Alternatives to Animal Testing – ALTWEB	Questioning
Mar. 16, 2017 (Day Order 1)	Unit 3 First Aid for Animals ABC Drill	Lecture	Internet	Questioning

Mar. 17 - 23, 2017	
(Day Order 2 to 6)	REVISION
March 24, 2017	
(Day Order 1)	

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Kalpana Jayaraman (2 hrs) and Dr. Preethi Jeyakumar (2 hrs)

Course Title : Microbiology

Course Code : 15ZL/MC/MB44

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Introduction to Microbiology Syllabus Unit1 History and Scope of microbiology Classification of Bacteria	Interaction& Discussion	Microbiology by Prescott Microbiology by Bauman	Questioning
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit1 Classification of Viruses Characteristic Features of Prokaryotes and eukaryotes Unit 5 Soil Microbiology: Role of Microorganisms in soil fertility	Lecture and Discussion	Microbiology – An Introduction by Tortora Microbiology by Prescott Elements of Microbiology – Pelczar	Small Test
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Microscopy -Types Specimen preparation and Staining Techniques - Media Preparation and types of culture media Preservation of culture – pure culture techniques Unit 5 Nitrogen Cycle Sulphur Cycle	Lecture	Microbiology – An Introduction by Tortora Microbiology by Prescott	Discussion
Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 2 Viruses - General Properties Isolation and cultivation T4 Phage – Reproduction	Lecture	Principles of Microbiology Volume II -Powar and Daginawala	Questioning

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Dec 15, 21, 2016	Unit 5 Microbiology of Food: Sources and Types of Microorganisms in Milk Tests for contamination Pasteurization of milk Sterilization Dairy Products		Missokialassa	
Dec. 15 - 21, 2016	Unit 2	Lecture	Microbiology – A Human	Oral Quiz
(Day Order 1 to 6)	Structure and multiplication of Animal Virus.Subviral Particles-Virions and Prions Unit 5		Perspective by Nester Microbiology – An Introduction by Tortora	
	Spoilage of food and its control Fermented Food			
Jan. 03- 09, 2017	Unit 2	Lecture	Microbiology – A	Questioning
(Day Order 1 to 6)	Archae –Brief Outline Bacteria – Morphology of bacterial cells-Size, Shape and arrangement Unit 5 Food poisoning Probiotics		Human Perspective by Nester Microbiology – An Introduction by Tortora	
Jan. 10- 17, 2017	Unit 2	Lecture	Foundations in	Questioning and
(Day Order 1 to 6)	Bacterial cell wall-chemical composition Characteristics of Gram positive and Gram negative bacteria Unit 5 Microbial damage of		Microbiology by Talaro	Discussion
	Microbial damage of materials: Natural fabrics, paper and cosmetics			
Jan. 18- 20, 2017	Unit 2	Lecture	Elements of	Small Test
(Day Order 1 to 3)	Molecular structure of Nucleoid. Plasmids –types and Functions Unit 4 The normal microbiota of		Microbiology – Pelczar	

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	the human body: skin,			
	mouth and oropharynx,			
	stomach, small intestine,			
	large intestine, vagina			
	and urethra			
Jan.23 - 28, 2017		C.A.	Tests	
Jan.30 – Feb 01,	Unit 2	Lecture	35: 11:1	Questioning
2017	Bacterial -reproduction and growth of bacterial population	PPT	Microbiology – An Introduction by	Assignment
(Day Order 4 to 6)			Tortora	submission(Third
	Unit 4		Microbiology by	Component)
	Disease cycle of a		Prescott	
	communicable disease			
	Epidemiology of			
	Infectious Diseases			
Feb.02 - 09, 2017	Unit 2		Microbiology – An	Questioning
(Day Order 1 to 6)	Growth curve –	Powerpoint Presentation	Introduction by Tortora	Exzoobition
	Measurement of Microbial Growth.			(Third
	Microbial Growth.		Microbiology by	Component)
	Unit 4		Prescott	Component)
	Airborne diseases:			
	Influenza	Lecture		
	Pneumonia	Lecture		
	Measles			
	Nosocomial infections			
	Food and Water borne			
	diseases:			
	Typhoid			
	Cholera			
	Polio			
F.1.40.45.55:=	Fomite borne infections			
Feb.10 - 17, 2017	Unit 3	Powerpoint		Quiz
(Day Order 1 to 6)	Physical Conditions for	presentation		
(==, 51461 1 10 0)	Bacterial growth-			
	temperature ,Oxygen and		Microbiology – An	
	pH		Introduction by	
	P		Tortora	
	Unit 4		Microbiology by	
	Infection through body		Prescott	
	fluids:			
	Hepatitis B			
	Ebola			
	Sexually Transmitted			
	Diseases:			
	Gonorrhoea			
	Syphilis			

	Genital Herpes			
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 3 Nutritional Requirements of bacteria.Nutritional classification of Bacteria Unit 4 Zoonotic Diseases: Swine flu Dengue fever Leptospirosis	Lecture	Microbiology – An Introduction by Tortora Microbiology by Prescott	Third Component Quiz
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 3 Recombination in Bacteria Transformation Microbial Control: Importance of Microbial Control Control of Microorganisms by physical and chemical agents	Lecture Self Study	Microbiology – An Introduction by Tortora Microbiology by Prescott	Small Test
Mar. 06 - 16, 2017		C.A.IMPROV	EMENT TESTS	
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 3 Conjugation in Bacteria Antibiotics and their mechanism of action	Lecture	Principles of Microbiology Volume II -Powar and Daginawala Elements of Microbiology – Pelczar	Questioning
Mar. 16, 2017 (Day Order 1)	Unit 3 Transduction in Bacteria Antibiotics and their mechanism of action (continued)	Lecture	Principles of Microbiology Volume II -Powar and Daginawala Elements of Microbiology – Pelczar	
Mar. 17 - 23, 2017 (Day Order 2 to 6) March 24, 2017 (Day Order 1)		REV	ISION	

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Vidhya S.A. (3 hrs) and Dr. Preethi Jeyakumar (2 hrs)

Course Title : Introduction to Human Physiology and Immunology

Course Code : 15ZL/AE/HI45

Week & No. of hours	Units &Topics	Teaching Methodology	Text & References	Method of Evaluation
	Introduction to Immunology and Physiology Syllabus, objectives and scope of the course Unit 1 Introduction – Outline of Human Anatomy (Integumentary, Skeletal, Muscles and Digestive systems) Unit 4 The Immune System- Overview Unit 1 Outline of Human Anatomy (Respiratory, Circulatory Excretory, Nervous, Endocrine and Reproductive Systems – a brief study) Unit 4 Cells of immune System			

Nov. 29 – Dec 5,	Unit 2		Text Book of	
2016	Respiratory System:	Lecture using	Medical	Diagram test
(Day Order 1 to 6)	Respiratory Pigment –	diagrams and	Physiology by	8
,	Oxygen Transport –	charts	Guyton A. C.	
	CO_2			
	Transport		Biology by	
			Solomon,	
	Unit 4		Martin and	
	Tissues of immune		Berg	Quiz
	system	Lecture and	Fundamentals	
		LCD	of Human	
			Physiology	
			By Lauralee	
			Sherwood	
			Kuby	
			Immunology by Goldsby, R.A,	
			Thomas J.	
			Kindt& Barbara	
			A. Osborne	
			Essential	
			Immunology by	
			Roitt, I M	
Dec 6 - 14, 2016	Unit 2		Text Book of	Objective test
(Day Order 1 to 6)	Asthma and Chronic	Lecture using	Medical	
	Obstructive Pulmonary	photographs	Physiology by	
	Disease (COPD)		Guyton A. C.	
	Unit 4			
	Primary Lymphoid		Kuby	
	organs Structure and	Lecture and	Immunology by	
	functions	Discussion	Goldsby, R.A,	Comprehension
			Thomas J.	
			Kindt& Barbara A. Osborne	
			71. OSOOTHC	
			Essential	
			Immunology by	
D 15 01 0016	TI:4 2		Roitt, I M	
Dec. 15 - 21, 2016	Unit 2	Powerpoint	Text Book of Medical	Objective test
(Day Order 1 to 6)	Circulatory System: Heart – Structure and	presentation	Physiology by	Objective test
	Function, Regulation of	prosentation	Guyton A. C.	
	Heart Beat and Blood			
	Pressure		Biology by	
			Solomon,	
	Unit 4		Martin and	
	Secondary Lymphoid	OHP	Berg	Quiz
	organs Structure and			

T	0	T	I = 1 -	
	functions		Fundamentals	
			of Human	
			Physiology	
			By Lauralee	
			Sherwood	
			Kuby	
			Immunology by	
			Goldsby, R.A,	
			Thomas J.	
			Kindt& Barbara	
			A. Osborne	
			Essential	
			Immunology by	
			Roitt, I M	
Jan. 03- 09, 2017	Unit 2	Lecture and	Text Book of	Questioning
	Heart Attack and	Discussion	Medical	Questioning
		Discussion		
	Hypertension – Electro		Physiology by	
	Cardio Gram and Angiogram		Guyton A. C.	
			Kuby	
	Unit 4		Immunology by	
	Types of immunity –		Goldsby, R.A,	
	Natural immunity		Thomas J.	
			Kindt& Barbara	
	Innate immunity			
			A. Osborne	
			Essential	
			Immunology by	
			Roitt, I M	
Jan. 10- 17, 2017	Unit 2	Lecture and	Text Book of	Diagram test
'	Excretory System:	LCD	Medical	Diagram test
(Day Older 1 to 0)	Structure of Nephron –	LCD		
	•		Physiology by	
	Physiology and Regulation of		Guyton A. C.	
	Excretion		Fundamentals	
	-		of Human	
	Unit 4		Physiology	
	Acquired Immunity		By Lauralee	
	Acquired miniminity		Sherwood	Quiz
			SHELWOOD	Quiz
			Kuby	
			Immunology by	
			Goldsby, R.A,	
		1	Thomas J.	
			i ilioilias i	
			Kindt& Barbara	
			Kindt& Barbara	
			Kindt& Barbara A. Osborne	

Jan. 18- 20, 2017 (Day Order 1 to 3)	Unit 2 Physiology and		Text Book of Medical	Comprehension
	Regulation of Excretion		Physiology by Guyton A. C.	
	Humoral immunity		Fundamentals of Human	
	·		Physiology	
			By Lauralee Sherwood	
Jan.23 - 28, 2017		С.А. Т	l Cests	
Jan.30 – Feb 01, 2017	Unit 2 Kidney Stones, Kidney	Lecture and LCD	Text Book of Medical	Questioning
(Day Order 4 to 6)	Failure and Dialysis		Physiology by Guyton A. C.	Assignment Submission(Third
	Unit 4 Cell mediated immunity		Immunology by E. Benjamin G.Sunshine and Coico	Component)
			Essential Immunology by Roitt, I M	
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 3 Endocrine System: Endocrine Organs in Human Structure, Function and Regulation of Pituitary Gland Unit 5	Lecture and LCD	Text Book of Medical Physiology by Guyton A. C. Biology by Solomon, Martin and Berg	Objective test
	Immunoglobulins- Structure, Types Characteristic features and functions of Immunoglobulins		Fundamentals of Human Physiology By Lauralee Sherwood	Quiz
			Kuby Immunology by Goldsby, R.A, Thomas J. Kindt& Barbara A. Osborne	
			Essential Immunology by Roitt, I M	

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Feb.10 - 17, 2017	Unit 3 Structure Function and	Lecture and	Text Book of	Questioning
(Day Order 1 to 6)	Structure, Function and	Discussion	Medical	
	Regulation of Pituitary		Physiology by	
	Gland		Guyton A. C.	
	Unit 5		Fundamentals	
			of Human	
	Antigen antibody			
	reactions		Physiology	
			By Lauralee	
			Sherwood	
			Kuby	
			Immunology by	
			Goldsby, R.A,	
			Thomas J.	
			Kindt& Barbara	
			A. Osborne	
			11. OSUUINE	
			Essential	
			Immunology by	
			Roitt, I M	
Feb.20 - 27, 2017	Unit 3	Lecture and	Text Book of	III Component
(Day Order 1 to 6)	Structure, Function and	LCD	Medical	Test (Quiz)
	Regulation of Thyroid		Physiology by	
	and Parathyroid Glands		Guyton A. C.	
	Unit 5		Fundamentals	
	Hypersensitivity Type I		of Human	
	and II-		Physiology	
			By Lauralee	
			Sherwood	
			Imamoun ala ave have	
			Immunology by	
			E. Benjamin	
			G.Sunshine and	
			Coico	
			Essential	
			Immunology by	
			Roitt, I M	
Feb.28 – Mar 07,	Unit 3	Lecture and	Text Book of	Objective test
2017	Structure, Function and	LCD	Medical	
(Day Order 1 to 6)	Regulation of Pancreas		Physiology by	
			Guyton A. C.	
	Unit 5			
	Hypersensitivity Type		Fundamentals	
	III and IV- Allergy &		of Human	Quiz
	Anaphylactic Shock		Physiology	-
			By Lauralee	
			Sherwood	
			Immunology by	

	1	T	1	
			E. Benjamin	
			G.Sunshine and	
			Coico	
			Kuby	
			Immunology by	
			Goldsby, R.A,	
			Thomas J.	
			Kindt& Barbara	
			A. Osborne	
			Essential	
			Immunology by	
			Roitt, I M	
Mar. 06 - 16, 2017		C.A.IMPROVE	MENT TESTS	
Mar. 08 - 15, 2017	Unit 3	Lecture and	Text Book of	Questioning
(Day Order 1 to 6)	Structure, Function and	Discussion	Medical	
	Regulation of Adrenal		Physiology by	
	Glands and Gonads		Guyton A. C.	
	Cianas ana Conaas		30,101171.0.	
	Unit 5		Fundamentals	
	Grave 's Disease,		of Human	
	Vaccination Principles		Physiology	
	and types Lecture and		By Lauralee	
	Discussion		Sherwood	
			T	
			Immunology by	
			N. Arumugam	
			and Fatima D	
			T7 1	
			Kuby	
			Immunology by	
			Goldsby, R.A,	
			Thomas J.	
			Kindt& Barbara	
			A. Osborne	
Mar. 16, 2017	Unit 3	Lecture and	Text Book of	Questioning
(Day Order 1)	Physiology of Ageing	Discussion	Medical	
()	,		Physiology by	
	Unit 5		Guyton A. C.	
	Vaccination Schedules		Guyton A. C.	
	v accination schedules			
			Kuby	
			Immunology by	
			Goldsby, R.A,	
			Thomas J.	
			Kindt& Barbara	
			A. Osborne	
Mar. 17 - 23, 2017		_		
(Day Order 2 to 6)		REVIS	SION	
March 24, 2017				
(Day Order 1)				
	4			

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Juliana Joe (3 hrs)

Course Title : Genes – Diseases - Society

Course Code : 15ZL/GE/GD23

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Unit 1 Introduction - Human gametes and their role in heredity DNA the genetic material - Human chromosomes	Lecture Interaction Chart and model	Concepts of Genetics by Klug	Questioning
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Sex determination in Man Mendelian inheritance: Monohybrid and Di-hybrid cross experiments - Laws of inheritance	Lecture	Concepts of Genetics by Klug Genetics – A conceptual approach by Pierce	Quiz
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Identification of Mendelian traits in Man - Pedigree analysis Unit 2 Incomplete dominance (Hair, straight / curled) Co-dominance (Sickle cell anemia)	Lecture Interaction	Human Heredity — Principles and issues by Cummings Principles of Genetics by Gardner	Case study
Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 2 Lethal genes, Types and inheritance. Multiple allelic inheritance (ABO and Rh Blood groups in man)	Lecture Demonstration Problems	Human Heredity – Principles and issues by Cummings	

Dec. 15 - 21, 2016 (Day Order 1 to 6)	Polygenic Inheritance – Skin colour in human Autosomal Recessive Inheritance- Albinism Autosomal Dominant Inheritance Familial hypercholesterolemia)	Lecture Problems	Concepts of Genetics by Klug Genetics – A conceptual approach by Pierce	Case study
Jan. 03- 09, 2017 (Day Order 1 to 6)	Unit 3 X-linked dominant and recessive inheritance Sex Influenced and sex limited genes and their inheritance.	Lecture	Genetics by Winchester Principles of Genetics by Gardner	Third Component - Pedigree chart submission
Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 3 Y-linked inheritance (Hypertrichosis) Mitochondrial inheritance (Kearns Sayre syndrome).	Lecture	Human Heredity - Principles and issues by Cummings iGenetics – A molecular approach by Russell	Quiz
Jan. 18- 20, 2017 (Day Order 1 to 3) Jan. 23 - 28, 2017	Unit 4 Disorders with genetic predisposition: Diabetes, Breast Cancer, Autism and Alzheimer's disease.	Lecture Discussion C.A. Tests	Genetics – A conceptual approach by Pierce Concepts of Genetics by Klug	Quiz
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 4 Chromosomal disorders: Down Syndrome, Turner Syndrome, Klinefelter Syndrome	Lecture Observation of karyotypes	Concepts of Genetics by Klug Human Heredity Principles and issues by Cummings	Quiz

Feb.02 - 09, 2017	Unit 4	PPT		Quiz
(Day Order 1 to 6)	Metabolic disorders: Phenylketonuria, Huntington disease and Lactose intolerance			
Feb.10 - 17, 2017	Genetic counseling.	Guest lecture		Quiz
(Day Order 1 to 6)	Eugenics Consanguineous marriage and its impact in the society.	Lecture Group discussion		
Feb.20 - 27, 2017	Unit 5	discussion		Third
(Day Order 1 to 6)	A fundamental understanding of recent advances in the field of Genetics.	Power point presentation	Concepts of Genetics by Klug	Component quiz
	Genetic engineering-applications.	Lecture		
	Genetically modified organisms – Gene Therapy			
Feb.28 – Mar 07,	Unit 5		Genetics – A	Quiz
2017	Gene Cloning	Lecture	conceptual	
(Day Order 1 to 6)	Predictive Genetic Testing: DNA Finger printing - Case	Power point presentation	approach by Pierce	
	Study		iGenetics – A molecular approach by Russell	
Mar. 06 - 16, 2017	C.A.	.IMPROVEMEN	Γ TESTS	
Mar. 08 - 15, 2017	The Human Genome Project:	Lecture	iGenetics – A	
(Day Order 1 to 6)	Objectives and applications.	Power point presentation	molecular approach by Russell	Questioning
Mar. 16, 2017	Unit 5	Discussion	Concepts of	
(Day Order 1)	Ethical, Legal and Societal Issues (ELSI) related to		Genetics by Klug	
	techniques in Genetics.		iGenetics – A	
			molecular approach by	
			Russell	
Mar. 17 - 23, 2017				
(Day Order 2 to 6)		REVISION		
March 24, 2017				
(Day Order 1)				

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Kalpana Jayaraman (5 hrs.)

Course Title : Animal Behaviour
Course Code : 11ZL/MC/AB64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Introduction, detailed outline of the syllabus. Scope and significance of Ethology – A brief history Observation – Identification and Location of individuals-describing – recording-cataloguing-interpreting and presenting data Methods of studying behavior	Lecture Guest Lecture	A Textbook of Animal Behavior – Harjinder Singh Understanding Biology – Raven and Johnson Animal Behavior – Reena Mathur	Discussion
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Concepts and terms – Motivation - Fixed Action Pattern(FAP) Concept of evolution of behavior Innate Releasing Mechanism Programming and sign stimuli Action Specific Energy	Lecture	Animal Behavior – Reena Mathur Animal Behavior – An Evolutionary Approach- Alcock	Questioning
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Concept of behavioral genetics Locomotion Maintenance and Related Behavior Foraging and Caching Study of animals in the wild Wild life conservation and behavior pattern of different animals Animal behavior studies in Laboratories	Lecture Self Study Powerpoint Presentations	A textbook of animal behavior – Harjinder Singh Animal Behavior – Reena Mathur	Questioning

Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 2 Basic and Maintenance Behavior Rhythms Sleep Shelter seeking and construction Finding a place to live: Habitat Selection and Territory	Lecture Powerpoint Presentations	Biology of animal behavior – Grier A textbook of animal behavior – Harjinder Singh Animal Behavior – Reena Mathur	Discussion Questioning
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 2 Homing – Migration Unit 3 Sociobiology Communication - methods of study – modes and mechanisms Communications - Chemical - Auditory– tactile – visual – electrical	Lecture Powerpoint Presentations Youtube videos	Biology of animal behavior – Grier A textbook of animal behavior – Harjinder Singh Animal Behavior – Reena Mathur	Questioning Submission of Project Outline
Jan. 03- 09, 2017 (Day Order 1 to 6)	Unit 3 Social behavior in bees Social organization in primates Behavior and Reproduction: Courtship Breeding Patterns Parental Care	Lecture Powerpoint Presentations Youtube videos	Biology of animal behavior – Grier Animal Behavior – Reena Mathur	Quiz
Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 4 Play: General attributes of play –examples Descriptions of play behavior – theories Interspecific Behaviour- Aggregations Commensalism	Lecture Powerpoint Presentations Youtube videos	Biology of animal behavior – Grier A textbook of animal behavior – Harjinder Singh	Quiz
Jan. 18- 20, 2017 (Day Order 1 to 3)	Unit 4 Predation Mutualism	Lecture Powerpoint Presentations	Biology of animal behavior – Grier	Quiz Project review

Jan.23 - 28, 2017		C.A. Tests	3	
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 4 Parasitism Unit 5 Internal control of behavior	Lecture Powerpoint Presentations	Biology of animal behavior – Grier	Quiz
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 5 Structure of the human brain and functioning – physiological and psychological aspects	Lecture Powerpoint Presentation	A textbook of animal behavior – Harjinder Singh Animal Behavior – Reena Mathur	Discussion
Feb.10 - 17, 2017 (Day Order 1 to 6)	Unit 5 Structure of the human brain and functioning – physiological and psychological aspects (continued) Role of nervous system and behavior Hormones and neurochemicals and behavior	Lecture Powerpoint Presentation	Animal behavior – Psychology Ethology and Evolution – McFarland Animal Behavior – Reena Mathur	Project Presentations (Third Component)
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 5 Psychoactive drugs – types- reactions and sources- role in human behavior Animal learning- different forms of learning Evolutionary development of learning in the animal	Lecture Powerpoint Presentation Youtube videos	Animal behavior – Psychology – ethology ad evolution – McFarland Introduction to Animal Behavior - Manning	Third Component Quiz
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 5 Abnormal behavior Causes of abnormal behavior Abnormal behavior patterns seen in the animals in a zoo, domestic livestock, domestic pets	Lecture Powerpoint Presentation	Animal behavior – Psychology – ethology ad evolution – McFarland Introduction to	Discussion

	Preventing, correcting and curing abnormal behavior		Animal Behavior - Manning	
Mar. 06 - 16, 2017	C.A.	IMPROVEME	NT TESTS	
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 5 Abnormal behavior in man Neurotic disease(Anxiety disorder) Phobic disorder Obsessive compulsive disorder Psychotic disorder- schizophrenia	Lecture Powerpoint Presentation Youtube videos	Essentials of understanding psychology - Feldman	Project Report Submission
Mar. 16, 2017 (Day Order 1)	Unit 5 Psychotic disorder- schizophrenia	Lecture	Essentials of understanding psychology - Feldman	Quiz
Mar. 17 - 23, 2017 (Day Order 2 to 6) March 24, 2017 (Day Order 1)		REVISION	N	

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr Preethi Jeyakumar (5 hrs)

Course Title : Developmental Biology

Course Code : 11ZL/MC/DB64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Unit 1 Introduction, detailed outline of the syllabus. Introduction to principles of developmental biology – its definition, scope and history	Lecture and Discussion	Embryology – Balinsky Developmental Biology – Veerbala Rastogi	Questioning
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Theories of development, preformation, epigenesis, pangenesis, recapitulation and biogenetic law Theories of germplasm, mosaic, regulative and gradient Organizers	Lecture and OHP	Developmental Biology – Gilbert Developmental Biology – Veerbala Rastogi	Questioning
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Metamorphosis in insects and amphibians Metamorphosis Hormonal control	Lecture and Discussion	Developmental Biology – Veerbala Rastogi Chordate Embryology – Verma and Agarwal	Questioning
Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 1 Mechanism of hormone action Tissue reactivity and regulation of metamorphic events Metamorphosis and Hormonal Action Comparison of Amphibian and Insect Metamorphosis	Lecture and Discussion	Developmental Biology – Veerbala Rastogi Embryology – Balinsky	Discussion with diagrams to study the comparison of metamorphosis

Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 1 Insect Cell lineage – positional and presumptive determination of cells and their fate Progressive Regeneration – Definition, Factors Examples to demonstrate the regenerating ability of salamander limb, and inductive interactions	Lecture and Discussion	Embryology – Balinsky Developmental Biology – Veerbala Rastogi A textbook of embryology – Arumugam	Questioning
Jan. 03- 09, 2017 (Day Order 1 to 6)	Unit 2 Gametogenesis Spermatogenesis—formation Spermatogenesis—factors, variations, morphology and significance Sperm—Morphology and Types	Lecture	Developmental Biology – Gilbert Developmental Biology – Veerbala Rastogi Chordate Embryology – Verma and Agarwal	Questioning
Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 2 Fertilization, definition, types, physico-chemical aspects of fertilization Parthenogenesis – Natural and Artificial Placentation in mammals	Lecture and Discussion	Embryology – Balinsky Developmental Biology – Veerbala Rastogi	Questioning Submission of Assignment(Third Component)
Jan. 18- 20, 2017 (Day Order 1 to 3)	Unit 2 Totipotency in Animals – Exceptions to Genome constancy Gene Amplification-Xenopus Drosophila Differentiation – Types, Control during Transcriptional and Translational Levels	Lecture and Discussion	Embryology – Balinsky Developmental Biology – Veerbala Rastogi	Questioning
Jan.23 - 28, 2017		C.A. Test	S	1

Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 2 Stem Cells-Adult stem cells Embryonic stem cells Foetal stem cells Stem cell therapy	Lecture and Discussion	Developmental Biology – Gilbert Embryology – Balinsky	Questioning
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 3 Cleavage – patterns, types, influence of yolk on cleavage – morula and blastulation Gastrulation –General morphogenetic movements in Chordate embryos	Lecture and Discussion	Embryology – Balinsky Developmental Biology – Veerbala Rastogi	Diagram Test
Feb.10 - 17, 2017 (Day Order 1 to 6)	Unit 3 Morphogenetic movements and comparative study of gastrulation in <i>Amphioxus</i> , Frog and Chick development Cell lineage –fate maps and their Significance Unit 4 Ectodermal Derivatives-Development of the eye and ear in frog and chick	Lecture and Discussion	Developmental Biology – Gilbert Developmental Biology – Veerbala Rastogi	Third Component Quiz
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 4 Mesodermal derivatives- Development of the blood and Heart in frog and chick Endodermal derivatives- Development of Digestive tract and its Derivatives	Lecture and Discussion	Embryology – Balinsky Developmental Biology – Veerbala Rastogi	Questioning
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 5 Role of Organiser in development, Competence, Gradient Theory Experimental Evidence-Nuclear Transplantation –Nucleo cytoplasmic interactions	Lecture and Discussion	Developmental Biology – Veerbala Rastogi Developmental Biology – Gilbert	Questioning

Mar. 06 - 16,		C.A. IMPROVEME	ENT TESTS	
2017				
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 5 Test Tube babies-Surrogate motherhood-Freezing human Embryos-grafts and transplants –Cloned Babies	Lecture and Discussion	Developmental Biology – Veerbala Rastogi Embryology – Balinsky	Quiz
Mar. 16, 2017 (Day Order 1)	Unit 5 Ethical issues related to Stem cells Artificial Insemination-In vitro Fertilization –Embryo transplants	Lecture and Discussion	Developmental Biology – Gilbert Developmental Biology – Veerbala Rastogi	Questioning
Mar. 17 - 23, 2017 (Day Order 2 to 6)		REVISIO	N	

Course Schedule – November 2016 – April 2017

Department : ZOOLOGY

Name/s of the Faculty : DR. Rita Jayaraj (3 hrs) & Dr. S A Vidhya (2 hrs)

Course Title : Environmental Biotechnology

Course Code : 11ZL/MC/EB 64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Unit 1 Environmental monitoring Introduction-	Power Point & Chalk and Talk	Environmental Biotechnology - Alan Scragg	Recapitulation
	Sampling – Air, Soil and Water Unit 4 Biofertilizers	Lecture	Textbook of Biotechnology- Sathyamurthy	Quiz
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Physical, Chemical and Biological analysis Unit 4 Biopesticides	Schematic representation-flow charts Lecture	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Test
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 1 Physical, Chemical and Biological analysis Unit 4 Biopolymers	Schematic representation-flow charts Lecture	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Test
Dec 6 - 14, 2016	Unit 1	Lecture	Environmental Biotechnology	Group Discussion

(Day Order 1 to 6)	Monitoring pollution-Bioindicators Unit 4 Bioplastics		- Alan Scragg Textbook of Biotechnology- Sathyamurthy	
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 1 Monitoring pollution- Bioindicators, Biomarkers, Biosensors Toxicity testing using biological material Unit 4 Biofuels-biogas, biodiesel	Lecture Power point and discussion	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Quiz
Jan. 03- 09, 2017 (Day Order 1 to 6)	Unit 3 Waste treatment Unit 4 Biofuels- ethanol, hydrogen	Power point and discussion Lecture	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Recapitulation Quiz
Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 3 Functions of the waste treatment system Sewage treatment Unit 5 Introduction-need for recovery of resources	Power point and discussion	Textbook of Biotechnology- Sathyamurthy	Recapitulation Submission of Assignment (Third Component)
Jan. 18- 20, 2017 (Day Order 1 to 3)	Unit 3 Methods- Removal of nitrogen Need for recovery of resources			Third component test

Jan.23 - 28, 2017	C.A. Tests				
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 3 Methods- Removal of phosphorus	Power point and discussion	Environmental Biotechnology - Alan Scragg		
	Unit 5 Oil recovery: Enhanced oil recovery	Lecture	Textbook of Biotechnology- Sathyamurthy		
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 2 Phytoremediation Sludge treatment and disposal Anaerobic digestion Agricultural and industrial waste Unit 5 Microbially enhanced oil recovery	Lecture	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy Environmental biotechnology- Rajiv K. Sinha	Discussion	
Feb.10 - 17, 2017 (Day Order 1 to 6)	Metal Bioremediation Unit 5 Recovery of metals -bioleaching	Flow charts Lecture	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Discussion Test	
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 3 Treatment of wastes from industries: Tannery Unit 5 Extraction of copper, uranium and gold	Schematic representation Lecture	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Quiz	

Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 3 Treatment of wastes from industries: Textile Sugar industries & distillery Unit 2 Case Studies: Exxon Valdez Oil Spill	Schematic representation	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Discussion
	Spin .	Lecture		
Mar. 06 - 16, 2017		C.A. IMPROVE	EMENT TESTS	
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 3 Treatment of waste water-Dairy Unit 2 Case Study: Acidic mine drainage in Yellow	Lecture	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology-	Discussion
	stone National Park		Sathyamurthy	
Mar. 16, 2017 (Day Order 1)	Unit 4 Biopesticides Unit 5 Resource recovery: Introduction Oil recovery: Enhanced Oil recovery	Lecture	Environmental Biotechnology - Alan Scragg	Discussion
Mar. 17 - 23, 2017 (Day Order 2 to 6) March 24, 2017 (Day Order 1)		REVI	SION	

Course Schedule – November 2016 – April 2017

Department : Zoology

Name/s of the Faculty : Dr. Juliana Joe (5 hrs)

Course Title : Vertebrate Physiology

Course Code : 11ZL/MC/VP64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Unit 1 Introduction Food requirements - Proteins, Fats, Carbohydrates, Vitamins, trace elements, antioxidants and fibre. Physiology of Digestion -	Group discussion Lecture	Animal Physiology by Verma, Agarwal and Tyagi Nutrition Now by Brown Judith, E.	
		Chart	Human Physiology – From cells to Systems by Sherwood Text Book of Medical Physiology by Guyton	
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Absorption of food Energy balance – sources of energy input – metabolic rate – neutral, positive and negative energy balance – control of food intake.	Lecture	Sherwood Guyton John Hole	Questioning
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 2 Respiratory system in Man Oxygen transport – Steps involved Oxy – Hemoglobin dissociation curve Carbon dioxide transport	Lecture Interaction Chart	Sherwood Guyton John Hole	Questioning

Dec 6 - 14, 2016	Unit 2	Lecture	Sherwood	Questioning
(Day Order 1 to 6)	Adaptations to diving and high		Guyton	
(24) 31401 1 10 3)	altitudes – anaerobiosis		John Hole	
	Heart Structure and Function -			
Dec. 15 - 21, 2016	Unit 2	Chart Lecture	Sherwood	Overtioning
	Regulation of Heart Beat	Lecture	Guyton	Questioning
(Day Order 1 to 6)			John Hole	
	Blood vessels – types			
	Blood Pressure - regulation			
Jan. 03- 09, 2017		PPT	Sherwood	Small test
(Day Order 1 to 6)	Unit 2			
	ECG – principles and applications Lymph – Composition and			
	Functions			
I 10 17 2017	TL:42	T	A 1	
Jan. 10- 17, 2017	Unit 3 Thermoregulatory mechanisms in	Lecture	Animal Physiology by	Questioning
(Day Order 1 to 6)	poikilotherms and homeotherms	PPT	Eckert	
			D. 1	
	Osmoregulators and Osmoconformers.		Biology by Solomon	
Jan. 18- 20, 2017	Unit 3	Lecture	Solomon	Small Test
(Day Order 1 to 3)	Osmoregulatory mechanism in	PPT		
	Vertebrates			
	Formation of nitrogenous wastes -		Eckert	
	ammonotelism - uricotelism –			
	ureotelism		Sherwood	
Jan.23 - 28, 2017		C.A. Test	1	
Jan.30 – Feb 01,	Excretory System – Structure of			
2017	Kidney and Nephron		Solomon	
	Physiology and regulation of		Bolomon	
(Day Order 4 to 6)	excretion in human.		T 1 TT 1	
			John Hole	
			Sherwood	
Feb.02 - 09, 2017	** ** 4	Lecture		
(Day Order 1 to 6)	Unit 4 Types of muscles - cardiac –			Third
	unstriated - striated -		Solomon	component-
	Ultrastructure of the striated			Exhibition
	muscle - properties of muscles. Muscle contraction - theories -		John Hole	
	chemical changes.		Sherwood	
		1		ı

Feb.10 - 17, 2017		Lecture		
(Day Order 1 to 6)	Unit 4 Neurons - nerve fibres - Nerve impulse - conduction – properties Reflex action, cranial and spinal - Autonomic nervous system – Neurotransmitters - E.E.G. principle	Lecture	John Hole Sherwood	
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 4 Structure and Physiology of Photo, Phono and Chemoreceptors of a mammal - Pain and Thermo receptors of Vertebrates	Self-study	Eckert Solomon	
	Colour changes	Lecture		
	Bioluminescence Electric Organs of vertebrates	Discussion	Sherwood	
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 5 Endocrine glands of a mammal – Pituitary – Structure, functions and regulation Structure, functions and regulation of Thyroid and Parathyroid glands Pancreas	Lecture Chart	Sherwood John Hole	Third component Quiz
Mar. 06 - 16, 2017	C.A. I	 MPROVEMENT	TESTS	
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 5 Structure, functions and regulation of and Adrenal gland Gonads – Endocrine functions – Physiology of Male & Female reproductive systems Menstrual cycle Pregnancy	Lecture	Sherwood John Hole	Questioning

Mar. 16, 2017	Unit 5	PPT		Questioning
(Day Order 1)	Physiology of ageing – causes and theories.		Solomon	
Mar. 17 - 23, 2017				
(Day Order 2 to	REVISION			
6)		KE VISION		
March 24, 2017				
(Day Order 1)				

Course Schedule – November 2016 – April 2017

Department : ZOOLOGY

Name/s of the Faculty : Dr. Rita Jayaraj (4Hrs)

Course Title : NUTRITION AND DIET THERAPY

Course Code : 11ZL/GE/ND44

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Introduction to the syllabus Unit 1 Sources and functions of Carbohydrates, Proteins and Lipids	Interaction& Discussion Chalk and Talk Power Point Presentation	Human Nutrition -Srilakshmi B Nutrition Science- Srilakshmi B	Discussion
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Unit 1 Malnutrition- PEM- Iodine deficiency- Vitamin A deficiency-Iron deficiency- Other micronutrients Nutigenomics	Lecture Power Point presentation	Nutrition Science- Srilakshmi B Nutrition- Paul Insel et al	Questioning
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Food Contamination (Sources, causes and consequences) -Agricultural produce (grains, Vegetables, Fruits) Animal produce (Milk, meat and sea food)	Lecture Power point presentation	Food Safety- Mudambi & Gopal	Questioning

Dec 6 - 14, 2016 (Day Order 1 to 6)	Unit 2 Importance of Environmental and personal Hygiene of food handler-Safety in food storage —handling and preparation Methods of food preservation	Power point presentation	Food Safety - Mudambi&Gopal	Comprehension
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 3 Eating Disorder Continuum Anorexia nervosa – Bulimia nervosa- Binge eating disorder- Night eating syndrome Overweight and Obesity Hypertension- Osteoporosis	Power point presentation	Nutrition- Paul Insel et al Perspectives in Nutrition- Gordon M.Wardlaw and Jeffrey S. Hampl	Comprehension
Jan. 03- 09, 2017 (Day Order 1 to 6) Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 3 Nutritional concerns of childhood Nutritional – related concerns Of Mature Adults Unit 3 Nutritional	Lecture	Perspectives in Nutrition- Gordon M.Wardlaw and Jeffrey S. Hampl Perspectives in Nutrition-	Questioning
(Day Order 1 to 6)	concerns of Adolescents		Gordon M.Wardlaw and Jeffrey S. Hampl	

In 19 20 2017	Unit 4			
Jan. 18- 20, 2017				
(Day Order 1 to 3)	Diet therapy:	Lecture	Perspectives in	Oral quiz
	purpose and		Nutrition-	
	principles-Food		Gordon	
	acceptance in		M.Wardlaw and	
	illness		Jeffrey S. Hampl	
	Therapeutic diets-			
	Tube feeding-			
1 22 20 2017	Parenteral feeding			
Jan.23 - 28, 2017		C.A. Test		
Jan.30 – Feb 01, 2017	Unit 3			
	Division District	Lecture	Perspectives in	Comprehension
(Day Order 4 to 6)	Diet in Diabetes	Lecture	Nutrition-	Comprehension
	mellitus		Gordon	
	Gastrointestinal		M.Wardlaw and	
	disorders-Ulcer,		Jeffrey S. Hampl	
	Diarrhoea and			
	constipation			
Feb.02 - 09, 2017	Unit 3	Lecture		
			Nutrition-	Component Quiz
(Day Order 1 to 6)	Cardiovascular	Power Point	Paul Insel et al	Component Quiz
	diseases	presentation	Taut miser et ar	
Feb.10 - 17, 2017	Unit 3		Perspectives in	
(Day Onder 1 to 6)	Diet the many for	Lecture	Nutrition-Gordon	Comprehension
(Day Order 1 to 6)	Diet therapy for		M.Wardlaw and	1
	addictive		Jeffrey S. Hampl	
	behaviours in			
	anorexia nervosa			
-		-		
Feb.20 - 27, 2017	Unit 3	Lecture	Nutrition-	Questioning
(Day Order 1 to 6)	Food allergies -	Power Point	Paul Insel et al	
(Day Oluci 1 to 0)	Classification	Presentation	Perspectives in Nutrition-	
	Ciassification	riesemation	Gordon	
			M.Wardlaw and	
			Jeffrey S. Hampl	
Feb.28 – Mar 07, 2017	Unit 3	Lecture	Perspectives in	Questioning
			Nutrition-	
(Day Order 1 to 6)	Dietary	Self study	Gordon	
	management	Downer - sint	M.Wardlaw and	
		Power point presentation	Jeffrey S. Hampl	
		presentation		

Mar. 06 - 16, 2017	C.A. IMPROVEMENT TESTS			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 5 Sensory evaluation and quality control- Factors affecting food acceptance – sensory	Lecture	Sensory evaluation - Rose Amerine	Recapitulation
Mar. 16, 2017 (Day Order 1)	Unit 5 Quality control and its importance.	Guest Lecture	Fundamentals of food, nutrition and diet therapy - Mudabi, S.R. and M. V. Rajagopal	Questioning
Mar. 17 - 23, 2017 (Day Order 2 to 6) March 24, 2017 (Day Order 1)		REV	ISION	