DEPARTMENT OF VETERINARY MICROBIOLOGY
BIHAR VETERINRY COLLEGE, PATNA – 14

Course Break up (Post Graduate Programme), Monsoon Semester, 2018

Course title: **Bacteriology I** [Course No.**VMC-601;** Credit Hrs.-(3+1)]
Semester -I

Course Instructors:

i. Dr. Sudha Kumari **(Course In- charge)**
ii. Dr.Manoj Kumar
iii. Dr. Pankaj Kumar
iv. Dr. Savita Kumari

Lecture Schedule (Theory)

SL. No.	Topic
1	Introduction to historical development of cellular organization
2	Genetic &chemical characteristics of eukaryotic and prokaryotic cells
3	Classification, nomenclature and identification
4	Genetic characterization and numerical taxonomy
5	Bacterial cell structure,
6	Physiology and antigenic structure.
7	Physiology and antigenic structure
8	Determinants of pathogenicity and its molecular basis of bacteria
9	Bacteriophages temperateand virulent phages
10	Lysogeny and lysogenic conversion
11	Bacterial genetics,bacterial variation
12	Genetic transfer mechanisms(transformation, transduction and conjugation)
13	Plasmids,transposons and drug resistance
14	Recombinant DNA technology
15	Systemicstudy of following bacteria
16	Gram negative –aerobic rods and cocci
17	Family *Pseudomonadaceae,*
18	*Legionellaceae*
19	*Neisseriaceae*
20	Genus *Brucella*
21	Facultative anaerobic gram negative rods
22	Family- *Vibrionaceae*
23	*Pasteurellaceae,*
24	*Enterobacteriacea*e and other genera

(Practical)

1	Morphological characterization
2	Cell fraction
3	Enrichment & isolation technology
4	Methods used in growth measurement and bacterial preservation
5	Gene transfer experiment
6	Detailed characterization of bacteria

29.9.2018

Course In-charge

Chairman

Memo no. 900 **/VMC/BVC;** **Patna:** 29 **/09/2018**

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DEPARTMENT OF VETERINARY MICROBIOLOGY
BIHAR VETERINARY COLLEGE, PATNA-14

No...127..... VMC/BVC/, Patna Dated...04/08/2018.....

Course No. - VMC-311 **Credit Hrs.** - (2+1)

Course Title- Systemic Veterinary Bacteriology and Mycology

Semester - V[th], Semester, 2018

Name of course instructors:

1. Dr. Savita Kumari* 2. Dr. Pankaj Kumar 3. Dr. Sudha Kumari 4. Dr. Manoj Kumar

***(course In-charge)**

Lecture Schedule/Course Breakup

Lecture No.	Topic
1	Introduction of Gram positive bacteria, Gram negative bacteria and fungus, their characterstics
2	Study of general characteristics, pathogenicity, toxins and virulence factors, diseases caused in different animals, diagnosis, their treatment and control by different bacteria :- Staphylococcus spp.
3	Streptococcus spp.
4-5	Bacillus spp.
6-8	Clostridium
9-11	Mycobacterium
12-13	Enterobacteriaceae
14	Campylobacter
15-16	Brucella Spp.
17	Pasteurella, Mannheimia
18	Pseudomonas , Burkholderia
19	Moraxella, Haemophilus, Tayloreda
20	Listeria
21	Actinobacillus Actinomyces
22	Arcanobacterium, Corynebacterium
23	Nocardia
24	Dermatophilus
25-27	Spirochetes
28	Gram Negative Anaerobes
29	Mycoplasma
30	Rickettsia
31	Chlamydia, Chlamydophilus
32	Dermatophytes
33	Rhinosporidium, Sporotrichum, Mycetomal fungi
34	Candida, Cryptococcus spp.
35	Aspergillus spp. , Zygomycetes,
36	Dimorphic fungi
37	Mycotic mastitis, Abortion
38	Mycotoxicoses

Savita 04/8/18
Course Incharge

Practical Schedule

Practical No.	Topic
1-3	Different Media used for isolation and identification of bacteria, Different types of stainings- Gram's staining, Acid-fast staining, Biochemical tests.
4	Study of collection, preservations, transportations and laboratory identifications of different microbial agents.
5	Study for isolation and identification of Staphylococcus
6	Study for isolation and identification of Streptoococcus
7	Study for isolation and identification of *Pasteurella multocida*
8-9	Study for isolation and identification of bacteria of Enteric infections, Isolation and Identification of *Escherichia coli*, *Salmonella* sp., *Klebsiella* sp., *Proteus* sp.
10	Study for isolation and identification of Brucella spp.
11	Study for isolation and identification of Mycobacterium- Causative agents of T.B. and Johne's Diseases
12	Study for isolation and identification of Clostridium spp.
13	Study for isolation and identification of Actinobacillus, Actinomyces sp.
14	Study for isolation and identification of *Bacillus anthracis*
15	Study for isolation and identification of *Psuedomonas* sp., *Burkholderia* sp.
16	Study for isolation and identification of Aspergillus, Yeasts, Penicillium spp. etc., Study of Dermatophytes.

Note: Schedule of Theory Lecture & Practical may change as per need; extra classes will be conducted for completion of syllabus.

04/8/18
Course Incharge &
O/c Academic

Head
Deptt. of Vety. Microbiology

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04/8/18
Course Incharge &
O/c Academic

Head
Deptt. of Vety. Microbiology

DEPARTMENT OF VETERINARY MICROBIOLOGY
BIHAR VETERINARY COLLEGE, PATNA-14

Letter No. 198/VMC/BVC **Dated** 29/09/18

Course No. – VMC 603
Course Title- Veterinary Mycology

Credit Hrs. - (1+1)
Semester – 1st Semester (Monsoon), 2018

Coursr Instructors: **Dr. Savita Kumari** (Course In-charge)

Dr. Sudha Kumari, Dr. Pankaj Kumar, Dr. Manoj Kumar

Lecture Schedule

Lecture No.	Topic
1	Morphology, general and cultural characteristics of Fungi
2	Physiology of fungi
3	Reproduction in fungi
4	Classification of fungi
5	Immunology of pathogenic fungi
6	Systematic study of animal mycoses- aspergillosis
7	Diseases- candidiasis, cryptococcosis
8	Dimorphic fungi, Epizootic lymphangitis
9	Sporotrichosis, histoplasmosis
10	Blastomycosis, coccidioidomycosis
11	Rhinosporidiosis, haplomycosis,
12	zygomycosis
13	Mycotic abortion, mycotic mastitis,
14	Mycetomas, mycotic dermatitis
15	Dermatophytoses
16-17	Mycotoxicosis

Practical No.	Topic
1	Outline for collection and processing of clinical materials for isolation of fungi
2-4	Study and preparation of different culture media for fungi
3-5	Collection and study of clinical material for diagnosis of fungal agent
6-7	Cultivation and slide culture technique of fungi
8-9	Study of gross and microscopic characters of fungi
10-11	Study of different fungal staining methods
12	Culture sensitivity test of fungi
14-16	Study for diagnosis of different fungi (Aspergillus, Penicillium, Candida etc.)

Savita 29/09/2018
Course In-charge
(Savita Kumari)

Chairman
Department of Veterinary Microbiology

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VMC- 604 [General Virology – 2+1] **Dr. Pankaj Kumar**

Sr. No	Lecture No (Theory)	Topic
1	Lecture 1	History of virology
2	Lecture 2	History of virology
3	Lecture 3	Origin and nature of viruses
4	Lecture 4	Biochemical and morphological structure of viruses
5	Lecture 5	Biochemical and morphological structure of viruses
6	Lecture 6	Nomenclature and classification of viruses
7	Lecture 7	Nomenclature and classification of viruses
8	Lecture 8	Nomenclature and classification of viruses
9	Lecture 9	Replication of DNA viruses
10	Lecture10	Replication of RNA viruses
11	Lecture 11	Viral genetics and evolution
12	Lecture 12	Genetic and non-genetic interactions between viruses
13	Lecture 13	Genetic and non-genetic interactions between viruses
14	Lecture 14	Virus-cell interactions
15	Lecture 15	Virus-cell interactions
16	Lecture 16	Viral pathogenesis; Viral persistence
17	Lecture 17	Oncogenic viruses
18	Lecture 18	Oncogenic viruses
19	Lecture 19	Epidemiology of viral infections
20	Lecture 20	Epidemiology of viral infections
21	Lecture 21	Immune response to viruses
22	Lecture 22	Immune response to viruses
23	Lecture 23	Viral vaccines
24	Lecture 24	Viral vaccines
25	Lecture 25	Viral chemotherapy
26	Lecture 26	Viral chemotherapy

[VMC- 701- Molecular Immunology 2+1] **Dr. Pankaj Kumar**

Sr. No	Lecture No (Theory)	Topic
1	Lecture 1	Innate Immunity- PAMPs and PRRs
2	Lecture 2	Innate Immunity- PAMPs and PRRs
3	Lecture 3	Innate Immunity- PAMPs and PRRs
4	Lecture 4	Advances in characterization of antigens and superantigens, epitope mapping
5	Lecture 5	Advances in characterization of antigens and superantigens, epitope mapping
6	Lecture 6	Novel functions of immunoglobulins and their fragments produced by rDNA technology
7	Lecture 7	Novel functions of immunoglobulins and their fragments produced by rDNA technology
8	Lecture 8	Cytokines and cytokine receptors: structure and function.
9	Lecture 9	Cytokines and cytokine receptors: structure and function.
10	Lecture10	Cytokines and cytokine receptors: structure and function.
11	Lecture 11	Complement components genes and polymorphism.
12	Lecture 12	MHC genes
13	Lecture 13	MHC genes
14	Lecture 14	Evolutionary aspects of recombination activating genes-mediated immunity in vertebrates
15	Lecture 15	Evolutionary aspects of recombination activating genes-mediated immunity in vertebrates
16	Lecture 16	Evolutionary aspects of recombination activating genes-mediated immunity in vertebrates
17	Lecture 17	Immunoinformatics as applied to MHC molecules-peptide complexes and other molecules
18	Lecture 18	Immunoinformatics as applied to MHC molecules-peptide complexes and other molecules
19	Lecture 19	Immunomics
20	Lecture 20	Immunomics

LPM-605: Shelter Management **1+1**

COURSE BREAK-UP

Theory:

S. No.	Topic	No. of Lecture	Date
1.	General principles in planning animal houses- farmstead and animal houses	1	10.08.2018
2.	Selection of site and planning	1	17.08.2018
3.	layouts for livestock farm of different sizes in different climatic zones in India	2	24.08.2018 31.08.2018
4.	Farm structures - General principles of construction of enclosures, floor and road	2	07.09.2018 14.09.2018
5.	Housing requirements of different classes of Livestock	1	28.09.2018
6.	Preparation of layouts, plans, arrangement of alleys	1	12.10.2018
7.	Fitting and facilities in the houses for horses, dairy cattle, calves, bulls, work cattle, dogs, pigs, sheep, goats, and poultry	2	26.10.2018 02.11.2018
8.	Improvement of existing buildings	1	16.11.2018
9.	water supply	1	23.11.2018
10.	feed and fodder delivery systems	1	30.11.2018
11.	Economics of Livestock housing	1	07.12.2018
12.	Housing - Disease control measures and sanitation of all classes of livestock	1	14.12.2018

Practical:

S. No.	Topic	No. of practical	Date
1.	Score card for animal houses	1	11.08.2018
2.	Time and motion study in Animal houses	1	18.08.2018
3.	Preparation of plans for animal houses for horses, cattle, sheep, pigs, goats, and dogs	5	25.08.2018 01.09.2018 08.09.2018 15.09.2018 22.09.2018
4.	Economics of livestock housing	1	29.09.2018
5.	Preparation of plan for animal houses of different sizes and climatic zones of India.	3	27.10.2018 03.11.2018 17.11.2018

LPM-605: Shelter Management **1+1**

Objective: To familiarize students with type of houses suited for different livestock under varying climatic conditions.

Theory

UNIT I: General principles in planning animal houses- farmstead and animal houses -Selection of site and planning; layouts for livestock farm of different sizes in different climatic zones in India - Farm structures - General principles of construction of enclosures, floor and road.

UNIT II: Housing requirements of different classes of Livestock - Preparation of layouts, plans, arrangement of alleys- Fitting and facilities in the houses for horses, dairy cattle, calves, bulls, work cattle, dogs, pigs, sheep, goats, and poultry.

UNIT III: Improvement of existing buildings; water supply; feed and fodder delivery systems - Economics of Livestock housing.

UNIT IV: Housing - Disease control measures and sanitation of all classes of livestock

Practical: Score card for animal houses - Time and motion study in Animal houses - Preparation of plans for Animal houses for horses, cattle, sheep, pigs, goats, and other livestock - Dogs and other pet animals - Economics of livestock housing - Preparation of plan for animal houses of different sizes and climatic zones of India.