

Dairy Science Park – Sandia National Laboratories USA Collaboration
Pakistan’s BRM Curriculum Development
DVM National Curriculum

DVM Semester	BRM Courses Integration	BRM Knowledge Level
Semester 1:	<i>No integration</i>	
Semester 2:	<ul style="list-style-type: none"> General Veterinary Microbiology (Basic concepts of biosafety/biosecurity *BS&S in microbiology lab practical session) 	<ul style="list-style-type: none"> Introduction to the BS&S, relevant terminologies and required examples <i>During</i> Lab practical <ul style="list-style-type: none"> 1 contact hour required
Semester 3:	<ul style="list-style-type: none"> General Veterinary Pathology (Basic concepts on sample collection and sample transportation) Molecular Biology (BRM intro – AMP model –basics only) 	<ul style="list-style-type: none"> Basic sample collection and transportation concepts <i>During</i> the Practical session of tissue processing through adding dual use of research project ideas. <ul style="list-style-type: none"> 1 contact hour required Intro to BRM and basics AMP model <ul style="list-style-type: none"> 1 contact hour required
Semester 4:	<ul style="list-style-type: none"> Livestock Feed Resources and Forage Conservation (BRM Risk Assessment, basics of hazards/threats Identification and risk characterization process) Veterinary Bacteriology and Mycology (Basic concepts of Good Lab Work Practices *GLWP and Personal Protective Equipment *PPE) Systemic Veterinary Pathology (Intro to SOPs development and Basic concepts of Decontamination process) 	<ul style="list-style-type: none"> BRM Risk Assessment process with basic concepts of hazards/threats Identification and risk characterization <i>During</i> Theory session <ul style="list-style-type: none"> 1 contact hour required Basic intro to Good Lab Work Practices *GLWP and Personal Protective Equipment *PPE <i>During</i> Practical session <ul style="list-style-type: none"> 2 contact hours required Introduction to SOPs development and basic concepts of spill kits/Decontamination process <i>During</i> Practical session <ul style="list-style-type: none"> 1 hour contact hour required
Semester 5:	<ul style="list-style-type: none"> Veterinary Clinical Pathology (Risk Assessment –hazard/threats identification process and Risk communication) 	<ul style="list-style-type: none"> Intermediate Risk assessment – hazards/threats identification process and Risk Communication <i>During</i> practical session <ul style="list-style-type: none"> 1 contact hour required

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	<ul style="list-style-type: none"> • Veterinary Virology (<i>Intro to Biocontainment facilities</i>) • Islamic Studies/Ethics (<i>Bioethics</i>) 	<ul style="list-style-type: none"> • Introduction to the concept of risk group organisms, Biocontainment facilities and BSL levels <i>During</i> Theory and Practical session <ul style="list-style-type: none"> ○ 1 contact hour required • Introduction to the Bioethics Concepts <i>During</i> Theory session <ul style="list-style-type: none"> ○ 1 contact hour required
Semester 6:	<ul style="list-style-type: none"> • Medicine Clinic-I (<i>Basic Field Biosecurity and Characterization of Waste Disposal</i>) • Theriogenology Clinic – I (<i>Animal health worker’s safety and security</i>) • Zoonoses and Food Safety (<i>Planning and Assessment- 6 topics from policy planning of BRM</i>) • Meat Inspection and Necropsy Practice (<i>Intro to PPE, Bio Waste management and disposal, Documentation and proper reporting for QA/QC</i>) 	<ul style="list-style-type: none"> • Introduction to the basics of Field Biosecurity and the characterization of biological wastes disposal <i>During</i> Clinical session <ul style="list-style-type: none"> ○ 1 contact hour required • Introduction to animal health worker’s safety and security <i>During</i> Clinical session <ul style="list-style-type: none"> ○ 1 contact hour required • Basic introduction to the concepts of BRM Planning and Assessment <i>During</i> Practical session <ul style="list-style-type: none"> ○ 1 contact hour required • Introduction to the concepts of PPE, Waste management system, Documentation and proper reporting for QA/QC in meat inspection and Necropsy practices. <ul style="list-style-type: none"> ○ 2 contact hours required
Semester 7:	<ul style="list-style-type: none"> • Veterinary Preventive Medicine-II (<i>Developing need assessment and building Human capacity for BRM</i>) • Medicine Clinic-II (<i>Incident Management and Response</i>) • Theriogenology Clinic – II (<i>Evaluate Human performance for BRM in Lab</i>) 	<ul style="list-style-type: none"> • Introduction to Developing need assessment and building Human capacity for BRM <i>During</i> Theory session <ul style="list-style-type: none"> ○ 1 contact hour required • Introduction/demo to the concepts of Incident Management and response <i>During</i> Practical session <ul style="list-style-type: none"> ○ 1 contact hour required

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	<ul style="list-style-type: none"> • Beef and Mutton Production <i>(Developing SOPs for food processing facilities)</i> 	<ul style="list-style-type: none"> • Human performance evaluation in BRM Lab <i>During</i> Theory and Practical <ul style="list-style-type: none"> ○ 1 contact hour required • Developing biosafety SOPs for food processing facilities <i>During</i> Practical session <ul style="list-style-type: none"> ○ 1 contact hour required
Semester 8:	<ul style="list-style-type: none"> • Veterinary Epidemiology and Public Health <i>(BRM principles used in Epidemiology and Public Health field)</i> • Medicine Clinic III <i>(Evaluating, measuring and improving overall BRM performance)</i> 	<ul style="list-style-type: none"> • Introduction to BRM principles used in Epidemiology and Public Health Field <i>During</i> Theory session <ul style="list-style-type: none"> ○ 1 contact hour required • Evaluating, measuring and improving overall BRM performance in clinic settings based on available standards <i>During</i> Practical session <ul style="list-style-type: none"> ○ 1 contact hour required
Semester 9:	<ul style="list-style-type: none"> • Poultry Pathology (Lab design principles for implementation of BRM) • Medicine Clinic-IV <i>(Basic/Preliminary Administrative control for BRM)</i> 	<ul style="list-style-type: none"> • Basic introduction to the concepts of Lab design principles for implementation of BRM <i>During</i> Practical session <ul style="list-style-type: none"> ○ 2 contact hour required • Basic/Preliminary introduction to the Administrative control for BRM <i>During</i> Clinics session <ul style="list-style-type: none"> ○ 1 contact hour required
Semester 10:	No integration	

Contact:

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