

Department of Zoology

Postgraduate

Curriculum Mapping of the courses to employability /  
entrepreneurship / skill development

<b>MSC PART I SEM I</b>		
Paper I	Course Code: RJSPZOO101	Unit I Phylogeny, Systematics of non-chordates and assorted topics-I Employability Research in field and taxonomical studies
Paper I	Course Code: RJSPZOO101	Unit II Phylogeny, Systematics of non-chordates. Employability Research in field and taxonomical studies
Paper I	Course Code: RJSPZOO101	Unit III Phylogeny, Systematics of Chordates & Assorted topics- I Employability Research in field and taxonomical studies
Paper I	Course Code: RJSPZOO101	Unit IV- Comparative Vertebrate Osteology-I Entire unit Development of Analytical skills Employability in museums, taxonomy field work and evolutionary biology
Paper II	Course Code: RJSPZOO102	Unit I Biomolecules- a structural and functional approach-I Skills: Analytical Thinking Employability in research labs
Paper II	Course Code: RJSPZOO102	Unit IIMetabolism and Regulation Skills : Analytical Thinking, Employability in research labs
Paper II	Course Code: RJSPZOO102	Unit III Carbohydrate metabolism and regulation Skills : Analytical Thinking, Employability in research labs
Paper II	Course Code: RJSPZOO102	Unit IV Lipid and mineral metabolism and regulation Skills : Analytical Thinking, Employability in research labs
Paper III	Course Code: RJSPZOO103	Unit I: Cell cycle and cytoplasmic inheritance. Skills developed : analytical ,critical & reasoning Employability: research biologist in cell and molecular biology.

Paper III	Course Code: RJSPZOO103	Unit II- Extension of Mendelian Genetics & Non-Mendelian inheritance I Entire unit Development of Analytical skills Employability in genetic research labs and preparation of competitive exams like NET, SET
Paper III	Course Code: RJSPZOO103	Unit III Evolution <b>Knowledge gained:</b> Understanding of evolutionary sciences and its application in modern day <b>Employability:</b> Archeology dept., Research biologist.
Paper III	Course Code: RJSPZOO103	Unit IV Developmental Biology:..Develops interest in understanding Human Reproductive biology.Job opportunity in Clinical Biology,
Paper IV	Course Code: RJSPZOO104	Unit I Microtomy, microscopy, centrifugation Skills : Technical skill , Employability: Technichian. marketing sector
Paper IV	Course Code: RJSPZOO104	Unit II Radioisotopes and extraction techniques Skills : Technical skill , Employability: Technician in Research laboratory, R&D sector
Paper IV	Course Code: RJSPZOO104	Unit III Principles and application of Spectroscopy Skills : Technical skill , Employability: Technician in Research laboratory, R&D sector
Paper IV	Course Code: RJSPZOO104	Unit IV Research Methodology Skill: Analytical, Critical Thinking, Interpretation Skill.
Practical I	Course Code: RJSPZOOP101	Identification and classification of various animals.
Practical II	Course Code: RJSPZOOP102	Hands on training for detection of various biochemical tests
Practical III	Course Code: RJSPZOOP103	Development of analytical and laboratory skills.
Practical IV	Course Code: RJSPZOOP104	Employability in research labs.

MSC PART I SEM II		
Paper I	Course Code: RJSPZOO201	Unit I Phylogeny, Systematics of non-chordates and assorted topic-II Employability Research in field and taxonomical studies
Paper I	Course Code: RJSPZOO201	Unit II Phylogeny of Protochordates, Agnatha and assorted topics II Employability Research in field and taxonomical studies
Paper I	Course Code: RJSPZOO201	Unit III Phylogeny, Systematics of Chordates & Assorted topics- II . Employability Research in field and taxonomical studies
Paper I	Course Code: RJSPZOO201	Unit IV- Comparative Vertebrate Osteology II Entire unit Development of Analytical skills Employability in museums, taxonomy field work and evolutionary biology
Paper II	Course Code: RJSPZOO202	Unit I Biomolecules- a structural and functional Skills: Analytical Thinking Employability in research labs
Paper II	Course Code: RJSPZOO202	Unit II Enzymes and Enzyme kinetics Skills: Critical Analysis, R&D sector, Research Labs
Paper II	Course Code: RJSPZOO202	Unit III Metabolic pathways and Integration of metabolism Skill: Analytical Thinking, Employability in research lab and preparation for competitive exams
Paper II	Course Code: RJSPZOO202	Unit IV Regulation of metabolism and inborn errors of metabolism Skill: Analytical Thinking Employability in research lab and preparation for competitive exams
Paper III	Course Code: RJSPZOO203	Unit I: Genetics- Chromosome theory of inheritance and Mendelism-II Skill : Analytical, reasoning, critical thinking Employability: Research labs, Genetic counselling.
Paper III	Course Code: RJSPZOO203	Unit II- Extension of Mendelian Genetics & Non-Mendelian inheritance I Entire unit Development of Analytical skills Employability in genetic research labs and preparation of competitive exams like NET, SET
Paper III	Course Code: RJSPZOO203	Unit III Evolution, <b>Knowledge gained:</b> Understanding of evolutionary relationship. <b>Employability:</b> Archeology dept., Research biologist, Evolutionary historians.

Paper IV	Course Code: RJSPZOO204	Unit I Principles and application of chromatography I Skills: Technical Employability: R&D sector, Research field
Paper IV	Course Code: RJSPZOO204	Unit II Principles and application of chromatography II Skills: Technical Employability: R&D sector, Research field
Paper IV	Course Code: RJSPZOO204	Unit III Principles and application of chromatography and Electrophoresis Skills: Technical Employability: R&D sector, Research field
Paper IV	Course Code: RJSPZOO204	Unit IV Good Laboratory Practices and Biosafety. Skills: Technical Employability: R&D sector, Research field
Practical I	Course Code: RJSPZOOP201	Identification and classification of various animals.
Practical II	Course Code: RJSPZOOP202	Skill: Technical Employability in research labs, R& D sector, Q & C sector
Practical IV	Course Code: RJSPZOOP204	Employability in research labs, R& D sector, Q & C sector

MSC PART II SEM III (Biotechnology)		
Paper V	Course Code: RJSPZOBT305	Unit I The implications of recombinant DNA technology of commercial products and microbial synthesis - Employability in Production industry, Analytical skills
Paper V	Course Code: RJSPZOBT305	Unit II: <b>Skills gained:</b> Knowledge on strategies of fermentation process and its applications. <b>Employability:</b> Fermentation industry, Molecular biologist, Research, Clinical research, Pharmaceuticals
Paper V	Course Code: RJSPZOBT305	Unit III- Medical Biotechnology Entire unit Development of Analytical skills and research designing Employability in health care sector and vaccine research institutes
Paper V	Course Code: RJSPZOBT305	Unit IV- Environmental Biotechnology Entire unit Development of Analytical skills and research designing Employability in environmental research and environmental consultancy
Paper VI	Course Code: RJSPZOBT306	Unit I <b>Skills gained</b> : knowledge on DNA sequencing, DNA fingerprinting and other important techniques. <b>Employability:</b> Molecular biologist, Bioinformatics, forensic sciences.
Paper VI	Course Code: RJSPZOBT306	Unit II- Manipulation of gene expression in prokaryotes Entire unit Development of Analytical skills and research designing Employability in genome research labs
Paper VI	Course Code: RJSPZOBT306	Unit III <b>skills gained:</b> Computational skills. knowledge on bioinformatics <b>Employability:</b> Research as bioinformatic experts.
Paper VI	Course Code: RJSPZOBT306	Unit IV <b>skills gained:</b> knowledge on different therapies for human disorders. <b>Employability:</b> Medical counsellor (Transplantation surgery), pharmaceutical companies,
Practical V	Course Code: RJSPZOBT305	Training on Basic lab. practices for biotechnology expts.
Practical VI	Course Code: RJSPZOBT306	Hands on training for streaking and other techniques . Working Skill enhancement.

<b>MSC PART II SEM III (Oceanography)</b>		
Paper VII	Course Code: RJSPZOOOC307	Unit I General Oceanography Entire unit Development of analytical and critical thinking skills Employability - as researcher in Oceanography institutes like NIO, NCPOR
Paper VII	Course Code: RJSPZOOOC307	Unit II Physical Oceanography Entire unit Development of analytical and critical thinking skills Employability - as researcher in Oceanography institutes like NIO, NCPOR
Paper VII	Course Code: RJSPZOOOC307	Unit III Unit 3: Chemical Oceanography - I Skill developed Analysis of different water parameters Employability Reserch in sea water chemistry, Marine ecosystem related projects
Paper VII	Course Code: RJSPZOOOC307	Unit IV Biological Oceanography Entire unit Development of analytical and critical thinking skills Employability - as researcher in Environmental consultancy, EIA preparation, Mangrove foundation
Paper VIII	Course Code: RJSPZOOOC308	Unit I Planktology Entire unit Development of analytical and critical thinking skills Employability - as researcher in Oceanography institutes like NIO, NCPOR
Paper VIII	Course Code: RJSPZOOOC308	Unit II Fish and Fishery science Entire unit Development of analytical and critical thinking skills Employability in fisheries sector, as researcher in fisheries institutes like CMFRI, CIFE
Paper VIII	Course Code: RJSPZOOOC308	Unit III Biotechnology in fishery and biometric studies Entire unit Development of analytical and critical thinking skills Employability in fisheries sector, as researcher in fisheries institutes like CMFRI, CIFE
Paper VIII	Course Code: RJSPZOOOC308	Unit IV Aquaculture I Entire unit Development of entrepreneurshship skills Employability in fisheries sector, Aquaculture start ups and business
Practical VII	Course Code: RJSPZOOOCP307	Development of analytical skills and knowledge of preparing hydrology reports. Employability in field of oceanic research as project fellow through institutes like NIO, NCAOR

Practical VIII	Course Code: RJSPZOOOCP308	Taxonomic and statistical studies with respect to fishery Employability in fishery research institute, aquaculture start ups and business
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**MSC PART II SEM III (Animal Physiology)**

Paper VII	Course Code: RJSPZOOAP307	Unit I- Level of response and Nutritional Physiology Employability: Nutritionist, Dietician etc.
Paper VII	Course Code: RJSPZOOAP307	Unit II- Dynamics of physiological fluids Employability: research labs
Paper VII	Course Code: RJSPZOOAP307	Unit III- Physiology of mobility Employability: Sports physiologist
Paper VII	Course Code: RJSPZOOAP307	Unit IV- Neurotransmission physiology Development of analytical skills. Employability: research labs.
Paper VIII	Course Code: RJSPZOOAP308	Unit I Stress, Water and pressure as environmental factors Skills: Analytical Skills      Employability : Research field
Paper VIII	Course Code: RJSPZOOAP308	Unit II: Oxygen as environmental factor. Skills: Analytical ,reasoning , Employability : Research labs,laboratory technicians
Paper VIII	Course Code: RJSPZOOAP308	Unit III Environmental Radiation, physiology of Biological Timing Skills: Analytical Skills      Employability : Research field
Paper VIII	Course Code: RJSPZOOAP308	Unit IV Physiological Tools for clinical diagnostics Skills: Technical      Employability: Pathological labs, R&D sector , QC sector
Practical VII	Course Code: RJSPZOOAPP307	Employability: Research assistant, R&D sector of pharma industry and Pathology labs.
Practical VIII	Course Code: RJSPZOOAPP308	Employability: Research assistant, R&D sector of pharma industry and Pathology labs.



<b>MSC PART II SEM IV (Biotechnology)</b>		
Paper V	Course Code: RJSPZOOBT405	Unit II <b>skills gained:</b> knowledge on industrial biotechnology. <b>Employability:</b> Industrial supervisors, Assistants, Research scientists.
Paper V	Course Code: RJSPZOOBT405	Unit III- Agricultural biotechnology Entire unit Development of Analytical and entrepreneurship skills Employability in agriculture sector, start ups related to biopesticides, biofertilizers
Paper V	Course Code: RJSPZOOBT405	Unit IV- Environmental Biotechnology-II Entire unit Development of Analytical skills and research designing Employability in environmental research and environmental consultancy
Paper VI	Course Code: RJSPZOOBT406	Unit I <b>skills gained:</b> Thorough understanding on gene transfer techniques and blotting techniques. <b>Employability:</b> Research scientist, molecular biologist.
Paper VI	Course Code: RJSPZOOBT406	Unit II- Manipulation of gene expression in prokaryotes Entire unit Development of Analytical skills and research designing Employability in genome research labs
Paper VI	Course Code: RJSPZOOBT406	Unit III <b>skills gained:</b> A complete know-how on Human genome project and its application in varied fields. <b>Employability:</b> Molecular scientist.
Paper VI	Course Code: RJSPZOOBT406	Unit IV <b>skills gained:</b> Thorough understanding on patenting rules and regulations <b>Employability:</b> IPR departments, Patenting offices.
Practical V	Course Code: RJSPZOOBTP405	Training on fermentation techniques widely applied in Industries.
Practical VI	Course Code: RJSPZOOBTP406	Hands on training for use of various kits and techniques

<b>MSC PART II SEM IV (Oceanography)</b>		
Paper VII	Course Code: RJSPZOOOC407	<b>Unit I General Oceanography</b> Entire unit Development of analytical and critical thinking skills Employability - as researcher in Oceanography institutes like NIO, NCPOR
Paper VII	Course Code: RJSPZOOOC407	<b>Unit II Physical Oceanography</b> Entire unit Development of analytical and critical thinking skills Employability - as researcher in Oceanography institutes like NIO, NCPOR
Paper VII	Course Code: RJSPZOOOC407	<b>Unit III Unit 3: Chemical Oceanography - II Skill</b> developed Analysis of different water pollutants Employability Reserch in sea water chemistry, Marine Pollution related projects
Paper VII	Course Code: RJSPZOOOC407	<b>Unit IV Biological Oceanography</b> Entire unit Development of analytical and critical thinking skills Employability - as researcher in Environmental consultancy, EIA preparation Mangrove foundation
Paper VIII	Course Code: RJSPZOOOC408	<b>Unit I Planktology</b> Entire unit Development of analytical and critical thinking skills Employability - as researcher in Oceanography institutes like NIO, NCPOR
Paper VIII	Course Code: RJSPZOOOC408	<b>Unit II Fish and Fishery science</b> Entire unit Development of analytical and critical thinking skills Employability in fisheries sector and community worker
Paper VIII	Course Code: RJSPZOOOC408	<b>Unit III Biotechnology in fishery and biometric studies</b> Entire unit Development of analytical and critical thinking skills Employability in fisheries sector, as researcher in fisheries institutes like CMFRI, CIFE
Paper VIII	Course Code: RJSPZOOOC408	<b>Unit IV Aquaculture II</b> Entire unit Development of entrepreneurship skills Employability in fisheries sector, Aquaculture start ups and business
Practical VII	Course Code: RJSPZOOOCP407	Development of analytical skills and knowledge of preparing hydrology reports. Employability in field of oceanic research as project fellow through institutes like NIO, NCAOR

Practical VIII	Course Code: RJSPZOOOCP408	Taxonomic and statistical studies with respect to fishery, Employability in fishery research institute, aquaculture start ups and business
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MSC PART II SEM IV (Animal Physiology)		
Paper VII	Course Code: RJSPZOOAP407	Unit I- Physiology of Respiration and Nitrogen Metabolism. Development of reasoning abilities. Employability: As a physiologist in Research labs.
Paper VII	Course Code: RJSPZOOAP407	Unit II- Dynamics of physiological fluids- composition. Employability: As a physiologist in Research labs, in blood banks and Dialysis centres.
Paper VII	Course Code: RJSPZOOAP407	Unit III- Physiology of Continuity of Life. Employability: In IVF centres, As endocrinologists.
Paper VII	Course Code: RJSPZOOAP407	Unit IV- Endocrine regulation, sensory & effector physiology. Employability: As endocrinologists.
Paper VIII	Course Code: RJSPZOOAP408	Unit I Pressure as environmental factors. Skill: Reasoning and critical thinking
Paper VIII	Course Code: RJSPZOOAP409	UNIT II: Temperature as environmental factor. Skill : Reasoning,critical thinking Employability: research based on physiology of humans and animals
Paper VIII	Course Code: RJSPZOOAP408	Unit III: Radiation and physiology of biological rhythms. Skills: Analytical Skills Employability : Research field
Paper VIII	Course Code: RJSPZOOAP408	Unit IV Physiological Tools for clinical diagnostics Skills: Technical Employability: Pathological labs, R&D sector , QC sector
Practical VII	Course Code: RJSPZOOAPP407	Employability: Research assistant in Research labs, Technician in Pathology labs, R&D sector of pharma industry, QC sector.
Practical VIII	Course Code: RJSPZOOAPP408	Employability: Research assistant in Research labs, Technician in Pathology labs, R&D sector of pharma industry, QC sector.