V.V.VANNIAPERUMAL COLLEGE FOR WOMEN
(Belonging to Virudhunagar Hindu Nadars)
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PEOs, POs, PSOs and COs

B.Sc. ZOOLOGY

Programme Educational Objectives (PEOs)

PEOs are broad statements that describe the career and professional achievements, that the Programme is preparing the graduates to achieve within the first few years after graduation. PEOs are framed for each Programme and should be consistent with the Mission of the Institution.

Programme Outcomes (POs)

POs shall be based on Graduate Attributes (GAs) of the Programme. The GAs are the attributes expected of a graduate from a Programme in terms of knowledge, skills, attitude and values. The Graduate Attributes include Disciplinary Knowledge, Communication Skills, Critical Thinking, Problem Solving, Analytical Reasoning, Research Related Skills, Co-operation/Team Work, Scientific Reasoning, Reflective Thinking, Information/Digital Literacy, Multicultural Competence, Moral and Ethical Awareness/Reasoning, Leadership Qualities and Lifelong Learning.

On successful completion of the Programme, the students will be able to

1 Apply effectively the acquired knowledge and skill in the field of Arts, Physical Science, Life Science, Computer Science, Commerce and Management for higher studies and employment. (*Disciplinary Knowledge*)

2 Communicate proficiently and confidently with the ability to express original/complex ideas effectively in different situations. (*Communication Skills)*

3 Identify, formulate and solve problems in real life situations scientifically/ systematically by adapting updated skills in using modern tools and techniques. (*Scientific Reasoning and Problem Solving)*

4 Critically analyse, synthesise and evaluate data, theories and ideas to provide valid suggestions for the betterment of the society. (*Critical Thinking and Analytical Reasoning)*

5 Use ICT in a variety of self-directed lifelong learning activities to face career challenges in the changing environment. (*Digital Literacy, Self - directed and Lifelong Learning)*

6 Self-manage and function efficiently as a member or a leader in diverse teams in a multicultural society for nation building. (*Co-operation/Team Work and Multicultural Competence)*

7 Uphold the imbibed ethical and moral values in personal, professional and social life for sustainable environment. (*Moral and Ethical Awareness)*

Programme Educational Objectives (PEOs)

The students will be able to

- To mould the students into efficient professionals in educational Institutions, Research centres, Medical laboratory, Zoos, Museums etc.

- To empower the learners with skills to promote self-employment opportunities.

- To uphold the moral standards of students to enable them to face challenges in life and to be better citizens.

Key components of mission statement	PEO1	PEO2	PEO3
To impart quality education to meet out the needs of rural women folk.	√	√	-
To mould the students to be responsible and successful citizens.	-	√	√
To motivate them to apply the academic skills for the improvement of society.	√	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme**.** Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO

should be mapped to the respective PSO.

On completion of B.Sc. Zoology Programme, the students will be able to

PO1- *Disciplinary Knowledge*

PSO 1.a: Apply their knowledge of fundamental principles in biological sciences to pursue higher studies in interdisciplinary subjects and compete in their profession.

PSO 1.b: Use their practical skills gained in various branches of biology to promote their career, entrepreneurial skills and research activities.

PO2-*Communication Skills*

PSO 2: Communicate the biological concepts confidently in interviews and career for their personal betterment and extension programmes to create awareness among the villagers.

PO3- *Scientific Reasoning and Problem Solving*

PSO 3.a: Identify the causes for the environmental and health issues by the application of biological principles.

PSO 3.b: Solve the problems in the management of quality of environmental resources and culture units of economically valuable animals by adapting the scientific methods.

PO4 - *Critical thinking and Analytical Reasoning*

PSO 4.a: Design innovative projects for the betterment of their research endeavors in the various branches of animal sciences.

PSO 4.b: Design self employment units with the knowledge gained in applied biology to promote self employment and entrepreneurship in the society.

PSO5- *Digital Literacy, Self - directed and Lifelong Learning*

PSO 5: Use their computer skills in M.S Office to compete in their higher education, competitive exams and career.

PO6 - *Cooperation/Team Work and Multi-Cultural Competence*

PSO 6: Work efficiently with team spirit in a team for its success by the skills acquired through internship programmes and group practicals and assignments.

PO7 *–Moral and Ethical Awareness*

PSO 7: Could develop scientific responsibilities regarding the disposal of wastes, usage of natural products instead of chemicals in day today life and preservation of fauna in their locality.

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Semester I	**INVERTEBRATA-I**	**Hours/Week: 4**	
Core Course-1		**Credits: 4**	
Course Code 20UZYC11		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts of taxonomy and organization of invertebrates. [K1]

CO2: understand the biology and special adaptations of invertebrates. [K2]

CO3: explain the specialized structures and its role in physiology of invertebrates. [K2]

CO4: apply their knowledge to identify the special features of invertebrates. [K3]

CO5: analyze the salient features in invertebrates. [K4]

Course Code 20UZYC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**-**	**M**	**M**
CO2	**H**	**M**	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**H**
CO3	**H**	**M**	**M**	**M**	**H**	**H**	**L**	**M**	**M**	**M**
CO4	**H**	**M**	**H**	**H**	**H**	**H**	**M**	**M**	**M**	**H**
CO5	**H**	**H**	**H**	**H**	**H**	**H**	**L**	**H**	**M**	**H**

Semester I	**INVERTEBRATA-II**	**Hours/Week: 4**	
Core Course-2		**Credits: 4**	
Course Code 20UZYC12		**Internal** 25	**External** 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts of taxonomy and organization of invertebrates. [K1]

CO2: understand the biology and special adaptations of invertebrates. [K2]

CO3: explain the specialized structures and its role in physiology of invertebrates. [K2]

CO4: apply their knowledge to identify the special features of invertebrates. [K3]

CO5: analyze the salient features in invertebrates. [K4]

Course Code 20UZYC12	**PO1**		**PO2**	**PO3**		**PO4**		**PO5**	**PO6**	**PO7**
	PSO 1.a	**PSO 1.b**	**PSO 2**	**PSO 3.a**	**PSO 3.b**	**PSO 4.a**	**PSO 4.b**	**PSO5**	**PSO6**	**PSO7**
CO1	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**-**	**M**	**M**
CO2	**H**	**M**	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**H**
CO3	**H**	**M**	**M**	**M**	**H**	**H**	**L**	**M**	**M**	**M**
CO4	**H**	**M**	**H**	**H**	**H**	**H**	**M**	**M**	**M**	**H**
CO5	**H**	**H**	**H**	**H**	**H**	**H**	**L**	**H**	**M**	**H**

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Semester I	**ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – I**	**Hours/Week: 4**	
Allied Course -1 Course		**Credits: 4**	
Course Code 20UCHA11		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: define the basic principles, statements, laws and theories in chemistry. [K1]

CO2: understand the fundamental concepts in organic, inorganic and physical chemistry. [K2]

CO3: illustrate the preparations, uses and applications of polymers, hydrogen and water, various metallurgical process, bonding theories, colloids, sols, emulsion and gels [K2]

CO4: predict the type of reactions involved in polymers preparation, utility of biomedical polymers, suitable process for metal extraction and water purification, shape of molecules using VSEPR, VB and MO theories, properties of gaseous and colloidal substances. [K3]

CO5: analyze different methodology of preparing polymers, separation of metals from their ores, water purification processes, various bonding theories, gas laws and properties various colloids, applications of colloids and biomedical polymers. [K4]

Course Code 20UCHA11	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
CO1	**H**	**L**	**L**	**H**	**L**	**L**	**L**
CO2	**L**	**L**	**-**	**-**	**L**	**-**	**-**
CO3	**-**	**H**	**-**	**M**	**L**	**-**	**M**
CO4	**H**	**L**	**-**	**L**	**M**	**L**	**L**
CO5	**H**	**H**	**M**	**M**	**L**	**L**	**-**

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Semester I	**VALUE EDUCATION (2020 -21 onwards)**	**Hours/Week: 2**	
Ability Enhancement Compulsory Course		**Credits: 2**	
Course Code 20UGVE11		**Internal 100**	**External -**

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights.[K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	**H**	**M**	**-**	**-**	**L**	**-**	**H**
CO2	**H**	**M**	**-**	**-**	**L**	**-**	**H**
CO3	**H**	**M**	**-**	**-**	**L**	**-**	**H**
CO4	**H**	**M**	**-**	**-**	**H**	**H**	**H**
CO5	**H**	**M**	**-**	**-**	**L**	**H**	**H**

Semester II	**CHORDATA- I**	**Hours/Week: 4**	
Core Course-3		**Credits: 4**	
Course Code 20UZYC21		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in taxonomy of chordates. [K1]

CO2: understand the biology of chordates. [K2]

CO3: explain the various physiological processes in chordates. [K2]

CO4: apply the knowledge to appreciate the adaptations of chordates. [K3]

CO5: analyze the unique features in chordates. [K4]

Course Code 20UZYC21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO 7
CO1	H	H	H	M	H	H	L	L	M	H
CO2	H	H	L	H	M	M	L	L	M	L
CO3	H	M	L	H	H	H	L	L	M	H
CO4	M	M	M	H	H	M	L	L	M	H
CO5	H	H	M	H	H	M	M	H	M	H

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Semester II	**CHORDATA- I**	**Hours/Week: 4**	
Core Course-3		**Credits: 4**	
Course Code 20UZYC21N		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in taxonomy of chordates. [K1]

CO2: understand the biology of chordates. [K2]

CO3: explain the various physiological processes in chordates. [K2]

CO4: apply the knowledge to appreciate the adaptations of chordates. [K3]

CO5: analyze the unique features in chordates. [K4]

Course Code 20UZYC21N	**PO1**		**PO2**	**PO3**		**PO4**		**PO5**	**PO6**	**PO7**
	PSO 1.a	**PSO 1.b**	**PSO 2**	**PSO 3.a**	**PSO 3.b**	**PSO 4.a**	**PSO 4.b**	**PSO 5**	**PSO 6**	**PSO 7**
CO1	**H**	**H**	**H**	**M**	**H**	**H**	**L**	**L**	**M**	**H**
CO2	**H**	**H**	**L**	**H**	**M**	**M**	**L**	**L**	**M**	**L**
CO3	**H**	**M**	**L**	**H**	**H**	**H**	**L**	**L**	**M**	**H**
CO4	**M**	**M**	**M**	**H**	**H**	**M**	**L**	**L**	**M**	**H**
CO5	**H**	**H**	**M**	**H**	**H**	**M**	**M**	**H**	**M**	**H**

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Semester II	**CHORDATA- II**	**Hours/Week: 4**	
Core Course-4		**Credits: 4**	
Course Code 20UZYC22		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in taxonomy and internal organization of chordates. [K1]

CO2: understand the biology and special adaptations of animals. [K2]

CO3: explain the various physiological processes in chordates. [K2]

CO4:apply their knowledge to identify the special features of chordates. [K3]

CO5: analyze the salient features and evolution of organs in chordates. [K4]

Course Code 20UZYC22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO 7
CO1	H	H	H	M	H	H	L	L	M	H
CO2	H	H	L	H	M	M	L	L	M	L
CO3	H	M	L	H	H	H	L	L	M	H
CO4	M	M	M	H	H	M	L	L	M	H
CO5	H	H	M	H	H	M	M	H	M	H

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Semester II	**CHORDATA- II**	**Hours/Week: 4**	
Core Course-4		**Credits: 4**	
Course Code 20UZYC22N		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in taxonomy and internal organization of chordates. [K1]

CO2: understand the biology and special adaptations of animals. [K2]

CO3: explain the various physiological processes in chordates. [K2] CO4:apply their knowledge to identify the special features of chordates. [K3]

CO5: analyze the salient features and evolution of organs in chordates. [K4]

Course Code 20UZYC22N	**PO1**		**PO2**	**PO3**		**PO4**		**PO5**	**PO6**	**PO7**
	PSO 1.a	**PSO 1.b**	**PSO 2**	**PSO 3.a**	**PSO 3.b**	**PSO 4.a**	**PSO 4.b**	**PSO 5**	**PSO 6**	**PSO 7**
CO1	**H**	**H**	**H**	**M**	**H**	**H**	**L**	**L**	**M**	**H**
CO2	**H**	**H**	**L**	**H**	**M**	**M**	**L**	**L**	**M**	**L**
CO3	**H**	**M**	**L**	**H**	**H**	**H**	**L**	**L**	**M**	**H**
CO4	**M**	**M**	**M**	**H**	**H**	**M**	**L**	**L**	**M**	**H**
CO5	**H**	**H**	**M**	**H**	**H**	**M**	**M**	**H**	**M**	**H**

Semester I/II	**CORE PRACTICAL - I LAB IN INVERTEBRATA AND CHORDATA**	**Hours/Week: 2**	
Core Course-3		**Credits: 2**	
Course Code 20UZYC21P		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the key concepts in biology to identify the invertebrates and chordates. [K3]

CO2: use the theoretical concepts to learn the various systems in animals. [K3]

CO3: make use of their knowledge and skills to observe the unique features of animals. [K3]

CO4: identify the features in the anatomical systems of invertebrates and chordates. [K3]

CO5: compare the ecological and economic importance of invertebrates and chordates. [K4]

Course Code 20UZYC21P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO 6	PSO7
CO1	H	H	M	H	H	H	H	L	H	H
CO2	H	H	M	M	H	H	M	L	H	H
CO3	H	M	M	M	H	H	H	L	H	H
CO4	H	H	M	M	H	H	H	L	H	H
CO5	H	H	M	L	H	H	H	H	M	H

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Semester I/II	**CORE PRACTICAL - I LAB IN INVERTEBRATA AND CHORDATA**	**Hours/Week: 2**	
Core Course-3		**Credits: 2**	
Course Code 20UZYC21PN		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the key concepts in biology to identify the invertebrates and chordates. [K3]

CO2: use the theoretical concepts to learn the various systems in animals. [K3]

CO3: make use of their knowledge and skills to observe the unique features of animals. [K3]

CO4: identify the features in the anatomical systems of invertebrates and chordates. [K3]

CO5: compare the ecological and economic importance of invertebrates and chordates. [K4]

Course Code 20UZYC21PN	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	M	H	H	H	H	L	H	H
CO2	H	H	M	M	H	H	M	L	H	H
CO3	H	M	M	M	H	H	H	L	H	H
CO4	H	H	M	M	H	H	H	L	H	H
CO5	H	H	M	L	H	H	H	H	M	H

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Semester II	**ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – II**	**Hours/Week: 4**	
Allied Course I Course		**Credits: 4**	
Course Code 20UCHA21		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: know about the basic concepts in organic, inorganic and physical chemistry. [K1]

CO2: understand the chemical constituent in oils, fats, soaps, detergents, biomolecules, fuels, fertilizers and pollutants. [K2]

CO3: identify the methods of preparation for organic and inorganic compounds, sources, effects and control measures of pollutions, methods for removal of salt from water. [K2]

CO4: comprehend the classification of biomolecules, fuels, fertilizers, catalyst, pollutions, application of adsorption and biomolecule. [K3]

CO5: analyze the oils, fats and biomolecules functions, sources of pollutions, characteristics of catalysts and the effects with control measures for various pollution. [K4]

Course Code 20UCHA21	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7
CO1	**M**	**-**	**H**	**-**	**-**	**-**	**L**
CO2	**H**	**H**	**M**	**M**	**M**	**-**	**L**
CO3	**H**	**H**	**M**	**M**	**L**	**H**	**-**
CO4	**H**	**H**	**H**	**M**	**M**	**H**	**M**
CO5	**H**	**H**	**L**	**-**	**H**	**-**	**L**

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Semester II	**VOLUMETRIC ANALYSIS**	**Hours/Week: 2**	
Allied Course I **Practical Course**		**Credits: 2**	
Course Code **20UCHA21P**		**Internal** **40**	**External** **60**

COURSE OUTCOMES

On successful completion of the course, the learners should be able to

CO1: apply the Principles involved in the Volumetric analysis. [K3]

CO2: find out the strength of standard solutions. [K3]

CO3: estimate the amount of the substance present in the given solution by volumetric analysis. [K3]

CO4: determine the concentration of the unknown solutions. [K4]

CO5: analyse and evaluate the accuracy of the results. [K4]

Course Code 20UCHA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	-	M	M	M
CO2	H	H	H	M	H	-	M
CO3	H	H	H	L	-	-	L
CO4	H	H	H	M	L	M	M
CO5	H	H	M	L	L	M	L

Semester II	**VERMICULTURE**	**Hours/Week: 2**	
SEC -1		**Credits: 2**	
Course Code 20UZYS21		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in vermitechnology. [K1]

CO2: understand the culturable species of earthworm, techniques, methodology and management of pest in vermiculture. [K2]

CO3: explain the economic and ecological importance of vermiculture. [K2]

CO4: apply their knowledge and skills to set a vermiculture unit. [K3]

CO5: analyze the methods of vermiculture to carry out a successful culture unit for self employment. [K4]

Course Code 20UZYS21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	M	H	H	H	H	-	H	H
CO2	H	M	M	H	H	H	H	-	H	H
CO3	H	M	M	H	H	M	H	L	M	H
CO4	H	M	L	H	H	M	H	H	L	H
CO5	H	H	L	H	H	M	H	H	M	H

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Semester II	**VERMICULTURE**	**Hours/Week: 2**	
SEC -1		**Credits: 2**	
Course Code 20UZYS21N		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in vermitechnology. [K1]

CO2: understand the culturable species of earthworm, techniques, methodology and management of pest in vermiculture. [K2]

CO3: explain the economic and ecological importance of vermiculture. [K2] CO4: apply their knowledge and skills to set a vermiculture unit. [K3]

CO5: analyze the methods of vermiculture to carry out a successful culture unit for self employment. [K4]

Course Code 20UZYS21N	**PO1**		**PO2**	**PO3**		**PO4**		**PO5**	**PO6**	**PO7**
	PSO 1.a	**PSO 1.b**	**PSO 2**	**PSO 3.a**	**PSO 3.b**	**PSO 4.a**	**PSO 4.b**	**PSO 5**	**PSO 6**	**PSO 7**
CO1	**H**	**H**	**M**	**H**	**H**	**H**	**H**	**-**	**H**	**H**
CO2	**H**	**M**	**M**	**H**	**H**	**H**	**H**	**-**	**H**	**H**
CO3	**H**	**M**	**M**	**H**	**H**	**M**	**H**	**L**	**M**	**H**
CO4	**H**	**M**	**L**	**H**	**H**	**M**	**H**	**H**	**L**	**H**
CO5	**H**	**H**	**L**	**H**	**H**	**M**	**H**	**H**	**M**	**H**

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Semester III	**CELL AND MOLECULAR BIOLOGY**	**Hours/Week: 5**	
Core Course-5		**Credits: 5**	
Course Code 20UZYC31		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts about the different types of cells. [K1]

CO2: understand the structure of cells and organelles. [K2]

CO3: apply the knowledge about functions of cells and organelles in everyday life. [K3]

CO4: analyze the significant role of cells in molecular level. [K4]

CO5: assess the applications of various equipments and experiments in the study of cells. [K5]

Course Code 20UZYC31	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	L	L	L	L	M	-	L	L
CO2	H	M	H	H	M	M	-	-	L	-
CO3	H	M	H	M	L	H	M	M	M	H
CO4	H	H	M	H	M	L	H	L	M	H
CO5	H	H	M	H	H	L	H	M	M	L

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Semester III	**PLANT ECOLOGY AND PLANT PHYSIOLOGY**	**Hours/Week: 4**	
Allied Course		**Credits: 4**	
Course Code 20UBTA31		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: find the relationship between the plants with the environment. [K1]

CO2: compare the adaptations of plant groups in response to the environment. [K2]

CO3: interpret the structural and functional aspects of plant tissue system in relation to water. [K2]

CO4: identify aerobic and anaerobic respiration in higher plants and solve natural growth Hormonal issues in plants. [K3]

CO5: distinguish plant response and movements with the environment. [K4]

Course Code 20UBTA31	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	**H**	**M**	**M**	**M**	**L**	**L**	**-**
CO2	**H**	**M**	**M**	**M**	**L**	**L**	**-**
CO3	**H**	**M**	**M**	**M**	**L**	**L**	**-**
CO4	**H**	**M**	**M**	**M**	**L**	**L**	**-**
CO5	**H**	**M**	**M**	**M**	**M**	**L**	**-**

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Semester III	**AQUACULTURE**	**Hours/Week: 2**	
SEC -2		**Credits: 2**	
Course Code 20UZYS31		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: define the basic concepts and importance of aquaculture through recognizing the fish farming technology and equipment. [K1]

CO2: describe the knowledge necessary for professional or academic work in the field of aquaculture and fisheries. [K2]

CO3: select the advanced techniques used in aquaculture and fisheries to increase the rate of production of the cultured as well as capture species according to the increasing demand of the market. [K2]

CO4: develop the ability to guide layman individual in his/her difficulties during the construction as well as to run a fish farm successfully. [K3]

CO5: analyze the basic technical skills to management of nursery, rearing and stocking ponds of commercially valuable and cultivable fishes to promote self employment. [K4]

Course Code 20UZYS31	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 6
CO1	H	H	H	H	H	H	M	L	M	M
CO2	H	H	H	M	H	M	M	L	H	M
CO3	H	M	L	M	H	H	H	-	M	H
CO4	H	H	H	H	H	H	H	-	H	H
CO5	H	H	M	H	H	M	H	H	M	H

Semester III	**APPLIED ZOOLOGY**	**Hours/Week: 2**	
Non Major Elective Course -1		**Credits: 2**	
Course Code 20UZYN31		**Internal** 40	**External** 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts of various branches of culture Biology. [K1]

CO2: understand the structural organization, life cycle and culture techniques of selected culturable species. [K2]

CO3: explain the techniques to control diseases of commercially important species. [K2]

CO4: apply the learnt culture techniques of commercially important species to Promote self employment opportunity. [K3]

CO5: find out the economic importance of culturable species. [K3]

Course Code 20UZYN31	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
CO1	**H**	**M**	**L**	**M**	**M**	**M**	**H**
CO2	**M**	**M**	**M**	**M**	**M**	**M**	**H**
CO3	**M**	**M**	**M**	**L**	**M**	**M**	**M**
CO4	**M**	**M**	**M**	**H**	**M**	**M**	**M**
CO5	**H**	**M**	**L**	**H**	**H**	**M**	**H**

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Semester III	**HUMAN RIGHTS**	Hours/Week: 1
Generic Elective Course - 1		Credit : 1
Course Code **20UGEH31**		Internal 100

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recall the importance of Human Rights as a citizen. [K1]

CO2: recognise the concepts, laws and violations of Human Rights. [K1]

CO3: summarise their knowledge on evolution and growth Human Rights. [K2]

CO4: paraphrase the historical values of Human Rights in Peace building. [K2]

CO5: identify the works of National an Human Rights. [K3]

Course Code 20UGEH31	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
CO1	**H**	**M**	**-**	**-**	**-**	**-**	**-**
CO2	**H**	**M**	**-**	**-**	**-**	**-**	**-**
CO3	**H**	**M**	**-**	**-**	**-**	**M**	**-**
CO4	**H**	**M**	**-**	**-**	**M**	**M**	**H**
CO5	**H**	**M**	**-**	**-**	**M**	**M**	**H**

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Semester IV	**DEVELOPMENTAL BIOLOGY**	**Hours/Week: 5**	
Core Course-6		**Credits: 5**	
Course Code 20UZYC41		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the fundamental principles in developmental biology. [K1]

CO2: understand the various stages in the development of an embryo. [K2]

CO3: apply the knowledge to appreciate the various interactive processes involved during the development of an organism. [K3]

CO4: analyze the factors responsible for important events in embryological studies. [K4]

CO5: assess the merits of advanced concepts in developmental biology. [K5]

Course Code 20UZYC41	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	M	L	M	-	M	M	L	M	L
CO2	H	H	L	M	L	H	H	L	M	M
CO3	H	H	L	H	L	M	M	L	M	L
CO4	H	M	L	M	M	M	M	L	M	L
CO5	H	M	M	H	H	M	H	H	M	M

Semester IV	DEVELOPMENTAL BIOLOGY	Hours/Week: 5	
Core Course-6		Credits: 5	
Course Code 20UZYC41N		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the fundamental principles in developmental biology. [K1]

CO2: understand the various stages in the development of an embryo. [K2]

CO3: apply the knowledge to appreciate the various interactive processes involved during the development of an organism. [K3]

CO4: analyze the factors responsible for important events in embryological studies. [K4]

CO5: assess the merits of advanced concepts in developmental biology. [K5]

Course Code 20UZYC41N	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	M	L	M	-	M	M	L	M	L
CO2	H	H	L	M	L	H	H	L	M	M
CO3	H	H	L	H	L	M	M	L	M	L
CO4	H	M	L	M	M	M	M	L	M	L
CO5	H	M	M	H	H	M	H	H	M	M

Semester IV	**BEEKEEPING**	**Hours/Week: 2**	
SEC -3		**Credits: 2**	
Course Code 20UZYS41		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic concepts of beekeeping and the role of bees in the improvement of ecosystem. [K1]

CO2: understand the qualities of culturable species of honeybees and their behavior. [K2]

CO3: explain the efficient handling of bees in the maintenance of a successful culture unit. [K2]

CO4: apply the culture techniques of honeybees to promote self employment. [K3]

CO5: analyze the role of government as well as non government organizations to improve beekeeping industry in our country. [K4]

Course Code 20UZYS41	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	M	H	H	M	M	L	M	M
CO2	H	H	M	M	M	M	M	L	M	M
CO3	H	M	M	H	M	H	H	L	M	H
CO4	H	H	-	H	H	M	M	-	M	H
CO5	H	M	M	H	M	H	H	H	M	H

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Semester III/IV	**CORE PRACTICAL II** **CELL AND MOLECULAR BIOLOGY AND DEVELOPMENTAL BIOLOGY**	**Hours/Week: 2**	
Core Course-3		**Credits: 2**	
Course Code 20UZYC41P		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic principles for the handling of equipments. [K1]

CO2: understand the practical applications of methods in cell and molecular biology and developmental biology. [K2]

CO3: apply the knowledge and practical skills in completing their projects. [K3]

CO4: compare the functional significance of different types of cells. [K4]

CO5: evaluate the effectiveness of novel scientific techniques with that of conventional ones. [K5]

Course Code 20UZYC41P	**PO1**		**PO2**	**PO3**		**PO4**		**PO5**	**PO6**	**PO7**
	PSO 1.a	**PSO 1.b**	**PSO 2**	**PSO 3.a**	**PSO 3.b**	**PSO 4.a**	**PSO 4.b**	**PSO 5**	**PSO 6**	**PSO 7**
CO1	**H**	**M**	**M**	**L**	**L**	**H**	**H**	**L**	**H**	**M**
CO2	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**M**	**H**	**M**
CO3	**H**	**M**	**M**	**M**	**M**	**H**	**H**	**M**	**H**	**M**
CO4	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**H**	**M**
CO5	**H**	**H**	**M**	**H**	**L**	**M**	**H**	**H**	**H**	**M**

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Semester III/IV	**CORE PRACTICAL II CELL AND MOLECULAR BIOLOGY AND DEVELOPMENTAL BIOLOGY**	**Hours/Week: 2**	
Core Course-3		**Credits: 2**	
Course Code 20UZYC41PN		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the basic principles for the handling of equipments. [K3]

CO2: identify the practical applications of methods in cell and molecular biology and developmental biology. [K3]

CO3: make use of their theoretical knowledge and practical skills in completing their projects. [K3]

CO4: compare the functional significance of different types of cells. [K4]

CO5: evaluate the effectiveness of novel scientific techniques with that of conventional ones. [K5]

Course Code	**PO1**		**PO2**	**PO3**		**PO4**		**PO5**	**PO6**	**PO7**
20UZYC41PN	**PSO 1.a**	**PSO 1.b**	**PSO 2**	**PSO 3.a**	**PSO 3.b**	**PSO 4.a**	**PSO 4.b**	**PSO 5**	**PSO 6**	**PSO 7**
CO1	**H**	**M**	**M**	**L**	**L**	**H**	**H**	**L**	**H**	**M**
CO2	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**M**	**H**	**M**
CO3	**H**	**M**	**M**	**M**	**M**	**H**	**H**	**M**	**H**	**M**
CO4	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**H**	**M**
CO5	**H**	**H**	**M**	**H**	**L**	**M**	**H**	**H**	**H**	**M**

Semester IV	**APPLIED BOTANY**	**Hours/Week: 4**	
Allied Course		**Credits: 4**	
Course Code 20UBTA41		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: find the applied areas of Botany. [K1]

CO2; learnt skills related to laboratory as well as industries based work. [K2]

CO3: explain the applications of plants in various industries and how to become an entrepreneur. [K2]

CO4: solve the issues related to the applied areas of Botany. [K3]

CO5: analyze the applied potential areas/branches of Botany. [K4]

Course Code 20UBTA41	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
CO1	**H**	**M**	**M**	**M**	**L**	**L**	**L**
CO2	**H**	**M**	**M**	**M**	**L**	**L**	**L**
CO3	**H**	**M**	**M**	**M**	**L**	**L**	**L**
CO4	**H**	**M**	**M**	**M**	**L**	**L**	**L**
CO5	**H**	**M**	**M**	**M**	**M**	**L**	**L**

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Semester IV	**PLANT ECOLOGY, PLANT PHYSIOLOGY AND APPLIED BOTANY**	**Hours/Week: 2**	
Allied Practical		**Credits: 2**	
Course Code 20UBTA41P		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: apply the basic concepts learn in Botany for the identification of Plant Physiology experiments. [K3]

CO2: identify and dissect the ecologically important plant materials and draw the anatomical features. [K3]

CO3: identify, draw the diagrams and comment on the applied botany specimens.[K3]

CO4: infer about the Horticulture technique and completion the record work. [K3]

CO5: analyze and categorize the horticulture techniques and in the related areas. [K4]

Course Code 20UBTA41P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	**H**	**M**	**H**	**M**	**L**	**L**	**L**
CO2	**H**	**M**	**H**	**M**	**L**	**L**	**L**
CO3	**H**	**M**	**H**	**M**	**L**	**L**	**L**
CO4	**H**	**M**	**H**	**M**	**L**	**L**	**L**
CO5	**H**	**M**	**H**	**M**	**L**	**L**	**L**

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Semester IV	**Internship / Field Project (2020 -21 onwards)**	**Hours/Week: 0**
PART IV		**Credit: 1**
Course Code 20UZYI41G		**Internal 100** **External 60**

COURSE OUTCOMES

On completion of the Internship/Field Project, students will be able to

CO1: relate their theoretical insights with hands-on experience. [K3]

CO2: develop technical skills to their respective field of study .[K3]

CO3: demonstrate the attributes such as observational skills, team spirit and inter personal skills built through site visits. [K3]

CO4: exhibit the written communication skills acquired through internship/field project. [K3]

CO5: analyze the observations and results and communicate their academic and technological knowledge appropriately oral means. [K4]

Course Code 20UZYI41G	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	**H**	**M**	**M**	**M**	**M**	**H**	**-**
CO2	**H**	**M**	**M**	**M**	**M**	**H**	
CO3	**H**	**M**	**-**	**-**	**-**	**H**	
CO4	**H**	**H**	**M**	**M**	**-**	**M**	**H**
CO5	**H**	**M**	**H**	**H**	**M**	**-**	

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Semester IV	**ANIMAL SCIENCE**	**Hours/Week: 2**	
Non Major Elective Course -2		**Credits: 2**	
Course Code 20UZYN41		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic characters of beneficial and harmful microorganisms, beneficial, edible and harmful invertebrates and vertebrates. [K1]

CO2: understand the importance of beneficial, edible and harmful invertebrates and vertebrates. [K2]

CO3: explain the values of commercially and medically important invertebrates and vertebrates. [K2]

CO4: find out the beneficial and adverse effects of different groups of organisms. [K3]

CO5: apply their knowledge to appreciate the values of animals and their products. [K3]

Course Code 20UZYN41	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	L	H	M	L	M	H
CO2	H	L	M	L	L	M	H
CO3	M	L	M	M	L	M	M
CO4	M	L	H	M	L	M	M
CO5	M	-	L	H	H	M	H

Semester IV	**ANIMAL SCIENCE**	**Hours/Week: 2**	
NME -2		**Credits: 2**	
Course Code 20UZYN41N		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic characters of harmful and beneficial microorganisms. [K1]

CO2: understand the importance of beneficial and edible invertebrates. (K2)

CO3: explain the value of commercially important vertebrates. (K2)

CO4: apply their knowledge to appreciate the value of beneficial animals and their products. [K3]

CO5: compare the adverse effects of different groups of animals. [K4]

Course Code 20UZYN41N	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	**M**	**-**	**H**	**H**	**M**	**M**	**H**
CO 2	**M**	**-**	**H**	**H**	**M**	**M**	**H**
CO 3	**H**	**L**	**H**	**H**	**M**	**H**	**H**
CO 4	**M**	**L**	**H**	**H**	**M**	**H**	**H**
CO 5	**M**	**-**	**H**	**H**	**L**	**M**	**H**

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Semester IV	**ADOLESCENT PSYCHOLOGY**	**Hours/Week: 1**	
Generic Elective-		**Credits: 1**	
Course Code 20UGEA43		**Internal 100**	**External -**

Course Outcomes

On completion of the course, students will be able to

CO1: describe the concept, characteristics, developmental tasks, various challenges and self – identity of adolescents and state the meaning of counselling and counsellor. [K1]

CO2: explain the various domains of growth and development and self-identity, types of autonomy, self-governance and self-regulation skills and challenges of adolescents. [K2]

CO3: discuss the development of self -identity among adolescents, styles of counselling and qualities of a good counsellor. [K2]

CO4: identify the various problems of adolescents and find the measurements to combat it. [K3]

CO5: find the techniques to improve the self -esteem, self -reliance and to overcome the family conflicts by the adolescents to enhance the lifestyle and build the new strategies of counselling to compete with the survival fittest. [K3]

Course Code 20UGEA43	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
CO1	**M**	**M**	**L**	**L**	**M**	**L**	**L**
CO2	**H**	**M**	**M**	**L**	**H**	**L**	**M**
CO3	**H**	**M**	**M**	**L**	**H**	**L**	**M**
CO4	**H**	**M**	**M**	**M**	**H**	**L**	**H**
CO5	**H**	**M**	**M**	**H**	**H**	**L**	**H**

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Semester V	**BIOCHEMISTRY**	**Hours/Week: 4**	
Core Course- 7		**Credits: 4**	
Course Code		**Internal**	**External**
20UZYC51		**25**	**75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: define the basic concepts of Biochemistry. [K1]

CO2: describe the chemistry and biological importance of carbohydrates, lipids, proteins and amino acids. [K2]

CO3: apply the molecular techniques to gain knowledge on the biochemical processes. [K3]

CO4: analyze various metabolic pathways and metabolic disorders in organisms. [K4]

CO5: recommend the appropriate techniques for studying biomolecules. [K5]

Course Code 20UZYC51	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	**H**	**M**	**M**	**H**	**H**	**H**	**M**	**L**	**H**	**H**
CO2	**H**	**H**	**M**	**M**	**H**	**H**	**M**	**L**	**L**	**H**
CO3	**H**	**M**	**H**	**M**	**M**	**H**	**L**	**M**	**L**	**H**
CO4	**H**	**L**	**M**	**M**	**L**	**H**	**M**	**M**	**M**	**M**
CO5	**H**	**M**	**M**	**L**	**M**	**H**	**L**	**H**	**M**	**M**

Semester V	**ANIMAL PHYSIOLOGY**	**Hours/Week: 4**	
Core Course-8		**Credits: 4**	
Course Code 20UZYC52		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: define the basic concepts of biological processes in Animals. [K1]

CO2: explain the structure and physiology of various organs and systems in our body. [K2]

CO3: apply their knowledge to find out the various diseases in our body. [K3]

CO4: analyze the causes for various diseases and disorders in man. [K4]

CO5: recommend the methods of diagnosis and treatment. [K5]

Course Code 20UZYC52	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	M	L	L	L	L	H
CO2	H	H	H	L	M	L	L	L	L	H
CO3	H	H	H	L	L	L	L	L	M	H
CO4	H	H	H	L	L	L	M	L	M	H
CO5	H	H	H	L	L	H	H	H	M	H

Semester V	**GENETICS AND BIOSTATISTICS**	**Hours/Week: 4**	
Core Course-9		**Credits: 4**	
Course Code 20UZYC53		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: define the basic concepts of genetics and biostatistics. [K1]

CO2: explain the scope of genetics and biostatistics in the field of research. [K2]

CO3: apply their knowledge to analyze the data in genetics using statistical methods. [K3]

CO4: analyze the causes of genetic diseases using statistics. [K4]

CO5: assess the prevalence of genetic disorders using statistical analysis and to minimize the risk. [K5]

Course Code 20UZYC53	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	H	H	H	L	L	M
CO2	H	H	H	M	H	H	M	L	L	M
CO3	H	H	H	H	H	H	L	M	M	M
CO4	H	H	H	H	H	H	M	M	M	M
CO5	H	H	H	H	H	H	H	H	M	H

Semester V	**IMMUNOLOGY**	**Hours/Week: 4**	
DSE Course:1		**Credits: 4**	
Course Code 20UZYE51		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: Define the essential immunological principles and concepts. [K1]

CO2: explain the fundamental concepts of immunity and role of immune cells and organs involved in immunological process at a cellular and molecular level. [K2]

CO3: identify the roles of the immune system in both maintaining health and contributing to disease. [K3]

CO4: analyze how cell mediated and antibody mediated immunity work to protect a host from pathogenic organisms and harmful substances. [K4]

CO5: appraise a comprehensive and practical understanding of basic immunological principles involved in research and clinical/applied science. [K5]

Course Code 20UZYE51	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	H	H	H	L	L	M
CO2	H	H	H	M	H	H	M	L	L	M
CO3	H	M	M	H	H	H	L	M	M	M
CO4	H	M	M	H	H	H	M	M	M	H
CO5	H	H	H	H	H	H	H	H	M	H

Semester V	**ENVIRONMENTAL BIOTECHNOLOGY**	**Hours/Week: 4**	
DSE Course: 1		**Credits: 4**	
Course Code 20UZYE52		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic concepts in environmental biotechnology. [K1]

CO2: explain the scope of environmental biotechnology. [K2]

CO3: apply the methods to improve the quality of environment. [K3]

CO4: analyze the factors that contaminate various ecosystems. [K4]

CO5: assess the impacts of recent methods in controlling pollution. [K5]

Course Code 20UZYE52	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	H	H	H	H	L	L	H
CO2	H	H	H	H	H	H	M	L	L	H
CO3	H	H	M	H	H	H	L	L	M	H
CO4	H	H	H	H	H	H	M	L	M	H
CO5	H	H	H	H	H	H	H	H	M	H

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Semester V	**AGRICULTURAL MICROBIOLOGY**	**Hours/Week: 4**	
DSE Course:1		**Credits: 4**	
Course Code 20UZYE53		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: Relate the relationship between the plant and microorganisms with Soil factors. [K1]

CO2: Explain the biofertilizer preparation process. [K2]

CO3: Identify the importance of microbial inoculants. [K3]

CO4: Analyze the importance and application of biofertilizers. [K4]

CO5: Interpret the importance biofertilizers preparation technique. [K5]

Course Code 20UZYE53	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	M	L	L	L	L	M
CO2	H	H	H	M	M	M	M	L	L	M
CO3	H	H	M	H	H	H	L	L	M	H
CO4	H	H	H	H	H	H	M	L	M	H
CO5	H	H	H	H	H	H	H	H	M	H

Semester V	**PROJECT**	**Hours/Week: 0**	
Core Course: 10		**Credits: 1**	
Course Code 20UZYC5PR		**Internal**	**External 100**

COURSE OUTCOMES

On completion of the project, the students will be able to

CO1: apply the learned concepts to select projects in Zoology and related interdisciplinary fields. [K3]

CO2: apply the theoretical knowledge to design experimental set up for their projects. [K3]

CO3: execute the technical skills in handling the equipment, and observe the results and exhibit the written communication skill acquired in related project. [K3]

CO4: analyze the experimental/ survey outcomes and present their project results effectively. [K4]

CO5: plan to meet out the challenges in regional and state level to solve the existing problems. [K5]

Course Code 20UZYC5PR	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	H	H	H	H	H	H	H
CO2	H	H	H	H	H	H	H	H	H	M
CO3	H	H	H	H	H	H	H	M	H	H
CO4	H	H	H	H	H	H	H	H	H	H
CO5	H	H	H	H	H	H	H	H	H	H

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Semester V	**SERICULTURE**	**Hours/Week: 2**	
SEC -4		**Credits: 2**	
Course Code 20UZYS51		**Internal 40**	**External 60**

COURSE OUTCOME

On completion of the course, the students will be able to
CO1: define the basic science in culture of silkworms. [K1]

CO2: explain the methods involved in sericulture industry. [K2]

CO3: apply their knowledge to set up a sericulture unit to promote self employment opportunity. [K3]

CO4: identify and solve the problems encountered in sericulture unit. [K3]

CO5: get support from various funding agencies to promote entrepreneurship. [K4]

Course Code 20UZYS51	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	H	H	H	H	M	M	M
CO2	H	H	H	H	H	H	H	M	H	H
CO3	H	H	H	H	H	H	H	M	M	H
CO4	H	H	H	H	H	H	H	M	H	H
CO5	H	H	H	H	H	H	H	H	H	H

Semester V	**FUNDAMENTALS OF COMPUTER**	**Hours/Week: 2**	
SEC:5		**Credits: 2**	
Course Code 20UZYS52		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the basic concepts, components and applications of a computer. [K1]

CO2: explain the various operating methods in computer. [K2]

CO3: describe the importance of Computer in day to day life. [K2]

CO4: apply their knowledge and skills to get employment in various fields. [K3]

CO5: analyze the applications of computer in the field of research. [K4]

Course Code 20UZYS52	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	**H**	**H**	**L**	**M**	**M**	**H**	**H**	**H**	**H**	**M**
CO2	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**H**	**M**	**L**
CO3	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**H**	**M**	**L**
CO4	**H**	**H**	**M**	**M**	**L**	**M**	**H**	**H**	**M**	**L**
CO5	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**	**H**	**L**

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Semester V	**ENVIRONMENTAL STUDIES**	**Hours/Week: 2**	
PART IV		**Credits: 1**	
Course Code 20UGES51		**Internal 100**	**External -**

COURSE OUTCOMES

On completion of the course, students will be able to

CO1 : State the social aspects of the environment, the present condition of the earth and the impact of human activities locally and globally. [K1]

CO2 : Explain the biodiversity conservation, environmental hazards and current possible disasters. [K2]

CO3 : Describe the need for sustainable development. [K2]

CO4 : Solve the environmental associated problems. [K3]

CO5 : Identify environmental legislations and management strategies. [K3]

Course Code 20UGES51	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**
CO 1	**H**	**H**	**L**	**L**	**L**	**-**	**L**
CO 2	**H**	**H**	**L**	**L**	**L**	**-**	**-**
CO 3	**H**	**H**	**L**	**L**	**L**	**-**	**-**
CO 4	**H**	**H**	**H**	**H**	**L**	**-**	**-**
CO 5	**H**	**H**	**H**	**H**	**L**	**-**	**H**

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Semester VI	**MICROBIOLOGY**	**Hours/Week: 5**	
Core Course-11		**Credits: 4**	
Course Code 20UZYC61		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the basic concepts of microbial studies. [K1]

CO2: explain the importance of microbes in various fields. [K2]

CO3: apply their knowledge in differentiating the beneficial and harmful microorganisms. [K3]

CO4: analyze the role of microorganism for the healthy lifestyle of mankind. [K4]

CO5: assess the applications of microbes for the betterment of ecosystem. [K5]

Course Code 20UZYC61	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	H	H	H	H	L	L	H
CO2	H	H	H	H	H	H	M	L	L	H
CO3	H	H	H	H	H	H	L	L	M	H
CO4	H	H	H	H	H	H	M	L	M	H
CO5	H	H	H	H	H	H	H	H	M	H

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Semester VI	**BIOTECHNOLOGY**	**Hours/Week: 5**	
Core Course-12		**Credits: 4**	
Course Code 20UZYC62		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the basic concepts of biotechnology. [K1]

CO2: explain the techniques of biotechnology in various fields. [K2]

CO3: apply their knowledge in using the techniques of biotechnology in the field of research. [K3]

CO4: analyze the merits of techniques for the betterment of man and environment. [K4]

CO5: recommend the suitable techniques for the production of novel products. [K5]

Course Code 20UZYC62	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	H	H	H	L	L	M
CO2	H	H	H	M	H	H	M	L	L	M
CO3	H	H	M	H	H	H	L	M	M	M
CO4	H	H	M	H	H	H	M	M	M	H
CO5	H	H	H	H	H	H	H	H	M	H

Semester VI	**EVOLUTION**	**Hours/Week: 5**	
Core Course- 13		**Credits: 4**	
Course Code 20UZYC63		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: learn essential concepts about the evolution of life on earth. [K1]

CO2: acquire the knowledge about the evidences of evolution which explains ancestry of animals. [K2]

CO3: apply the knowledge on variations that leads to speciation. [K3]

CO4: analyze the importance of causative factors on variations in evolution of species. [K4]

CO5: assess the evolutionary trends in the life history of animals. [K5]

Course Code 20UZYC63	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	**H**	**H**	**H**	**M**	**H**	**M**	**M**	**L**	**L**	**H**
CO2	**H**	**H**	**H**	**M**	**H**	**M**	**M**	**L**	**L**	**H**
CO3	**H**	**M**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**H**
CO4	**H**	**M**	**M**	**H**	**H**	**H**	**M**	**M**	**M**	**H**
CO5	**H**	**H**	**M**	**H**	**H**	**M**	**M**	**H**	**M**	**H**

Semester VI	**ECOLOGY**	**Hours/Week: 5**	
DSE Course: 2		**Credits: 4**	
Course Code 20UZYE61		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the basic concepts of environmental science. [K1]

CO2: explain the interactions of living organisms in various ecosystems. [K2]

CO3: apply the knowledge to find out the causes of ecological problems. [K3]

CO4: plan for solving the existing problems for restoration of environment. [K4]

CO5: assess the methods to promote sustainable management of healthy environment. [K5]

Course Code 20UZYE61	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	H	H	M	M	M	H
CO2	H	M	M	H	H	M	M	M	M	H
CO3	H	H	M	H	H	H	L	M	M	H
CO4	H	M	M	H	H	H	M	M	M	H
CO5	H	M	M	H	H	H	L	H	H	H

Semester VI	**ENTOMOLOGY**	**Hours/Week: 5**	
DSE Course		**Credits: 4**	
Course Code 20UZYE62		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: remember the basic concepts in entomology. [K1]

CO2: explain the kinds of insects and its role in various fields. [K2]

CO3: apply their knowledge in grouping the insects based on their impact on man and environment. [K3]

CO4: analyze the functional status of insects in various ecosystems. [K4]

CO5: assess the methods of control of pests and vectors. [K5]

Course Code 20UZYE62	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	H	H	H	L	L	H
CO2	H	H	H	M	H	H	M	L	L	H
CO3	H	H	H	H	H	H	L	M	M	H
CO4	H	H	H	H	H	H	M	M	M	H
CO5	H	H	H	H	H	H	H	H	M	H

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Semester VI	**INDUSTRIAL BIOTECHNOLOGY**	**Hours/Week: 5**	
DSE Course		**Credits: 4**	
Course Code 20UZYE63		**Internal 25**	**External 75**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: find the basic principles of biotechnological processes. [K1]

CO2: explain the industrial biotechnological innovations. [K2]

CO3: identify the industrial biotechnological techniques. [K3]

CO4: analyze microbial fermentation products. [K4]

CO5: interpret industrial applications of biotechnology. [K5]

Course Code 20UZYE63	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	M	L	L	L	L	M
CO2	H	H	H	M	M	M	M	L	L	M
CO3	H	H	M	H	H	H	L	M	M	M
CO4	H	H	M	H	H	H	M	M	M	H
CO5	H	H	H	H	H	H	H	H	M	H

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Semester VI	**POULTRY SCIENCE**	**Hours/Week: 2**	
SEC-6		**Credits: 2**	
Course Code 20UZYS61		**Internal 40**	**External 60**

COURSE OUTCOME (CO)

On completion of the course, the students will be able to

CO1: understand the fundamental concepts in poultry science. [K1]

CO2: explain the scope and importance of poultry farming. [K2]

CO3: apply their knowledge to set up a poultry farm to promote self employment opportunity. [K3]

CO4: identify and solve the problems encountered in poultry farm. [K3]

CO5: assess the rearing methods to bring out more productivity. [K4]

Course Code 20UZYS61	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	H	H	H	L	L	H
CO2	H	H	H	M	H	H	H	L	L	H
CO3	H	H	H	H	H	H	H	M	M	H
CO4	H	H	H	H	H	H	H	M	M	H
CO5	H	H	H	H	H	H	H	H	M	H

Semester VI	**LAB IN BIOCHEMISTRY AND ANIMAL PHYSIOLOGY**	**Hours/Week: 3**	
Core Practical-3		**Credits: 3**	
Course Code 20UZYC61P		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply theoretical knowledge in carrying out the laboratory experiments and field work. [K3]

CO2: develop skills in handling of equipments. [K3]

CO3: work independently using lab procedures in biochemistry and physiology. [K3]

CO4: apply their practical skills in designing the projects. [K3]

CO5: analyze and solve the problems using scientific techniques. [K4]

Course Code 20UZY61P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	H	M	H	H	M	H	H
CO2	H	H	H	H	M	H	M	H	H	H
CO3	H	H	H	H	M	H	H	H	H	H
CO4	H	H	H	H	H	H	M	H	H	H
CO5	H	H	M	H	H	H	H	H	H	H

Semester VI	**LAB IN EVOLUTION, GENETICS AND BIOSTATISTICS**	**Hours/Week: 3**	
Core Practical-4		**Credits: 3**	
Course Code		**Internal**	**External**
20UZYC62P		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply their theoretical knowledge in carrying out the laboratory experiments and field work. [K3]

CO2: develop problem solving skills in Evolution, Genetics and Biostatistics. [K3]

CO3: design experiments and conduct survey in evolution, genetics and biostatistics. [K3]

CO4: examine the causative factors of recent issues that affect human mankind. [K4]

CO5: analyze and interpret the data in genetics and evolution using statistical methods. [K4]

Course Code 20UZY62P	**PO1**		**PO2**	**PO3**		**PO4**		**PO5**	**PO6**	**PO7**
	PSO 1.a	**PSO 1.b**	**PSO 2**	**PSO 3.a**	**PSO 3.b**	**PSO 4.a**	**PSO 4.b**	**PSO 5**	**PSO 6**	**PSO 7**
CO1	**H**	**H**	**H**	**H**	**M**	**H**	**L**	**H**	**H**	**H**
CO2	**H**	**H**	**H**	**H**	**M**	**H**	**M**	**H**	**H**	**H**
CO3	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**
CO4	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**
CO5	**H**	**H**	**M**	**H**	**H**	**H**	**L**	**H**	**H**	**H**

Semester VI	**LAB IN MICROBIOLOGY AND BIOTECHNOLOGY**	**Hours/Week: 2**	
Core Practical-5		**Credits: 2**	
Course Code 20UZYC63P		**Internal 40**	**External 60**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: design new experiments in microbiology and biotechnology. [K3]

CO2: identify, classify and screen the microbes. [K3]

CO3: apply their knowledge to isolate the economically important microbial strains and nucleic acids. [K3]

CO4: analyze the usage of microbes in the field of research in biotechnology. [K4]

CO5: analyze the biotechnological methods in the production of novel products. [K4]

Course Code 20UZYC63P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	H	M	H	H	H	L	H	H
CO2	H	H	H	M	H	H	M	L	H	H
CO3	H	H	H	H	H	H	L	M	H	H
CO4	H	H	H	H	H	H	M	M	H	H
CO5	H	H	H	H	H	H	H	H	H	H

Semester V	**DIETETICS FOR WOMEN**	**Hours/Week: -**
EXTRA CREDIT COURSE: 1		**Credits: 2**
Course Code 20UZYO51		**Internal 100**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the concept of an adequate diet and the importance of meal planning.

CO2: know the factors affecting the nutrient needs during the life cycle for women.

CO3: gain knowledge about dietary management in common ailment.

Semester VI	**LIFE STYLE DISEASES**	**Hours/Week:-**
EXTRA CREDIT Course		**Credits: 2**
Course Code 20UZYO61		**Internal 100**

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: know about the causes, symptoms and dietary management of life style diseases.

CO2: plan therapeutic diets for life style diseases.

CO3: gain knowledge about diet counseling to patients and family.