

JAYARAJ ANNAPACKIAM COLLEGE FOR WOMEN (AUTONOMOUS)

A Unit of the Sisters of St. Anne of Tiruchirappalli

Accredited with 'A' Grade (3rd Cycle) by NAAC

DST FIST Supported College

Affiliated to Mother Teresa Women's University,

Kodaikanal

**PERIYAKULAM – 625 601, THENI DT.
TAMIL NADU.**



ACADEMIC COUNCIL
DEPARTMENT OF ZOOLOGY
09.09.2020

P.G AND RESEARCH CENTRE OF ZOOLOGY

U.G. PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO
1.	Think critically, evaluate analytically and apply the acquired knowledge of their discipline in related scenario.
2.	Formulate hypothesis, design experiments, use appropriate tools and interpret the results.
3.	Demonstrate the precise understanding of the principles and theories of their discipline through experiments.
4.	Enhance the communicative skills and gain confidence to disseminate knowledge through oral/verbal communications effectively at various situations.
5.	Identify the different roles in an organizational structure of the work place and carry out multiple roles in social responsibilities.
6.	Increase self-awareness, set and pursue meaningful goals, and develop positive personal qualities.

U.G. PROGRAMME SPECIFIC OUTCOMES (PSO)

PSO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PO MAPPED
1.	Develop a broad fundamental knowledge on the faunal diversity, classification, morphological features, adaptation and its biological activity.	PO - 1, PO - 5
2.	Explain how animals function and interact with respect to biological, Chemical and physical processes in natural and impacted environments.	PO - 2, PO - 5
3.	Survey the human life processes and demonstrate their ability to analyse the clinical samples and to diagnose the health ailments and aspire for healthy living.	PO - 1, PO - 2, PO - 3, PO - 4
4.	Perform experimental procedures and interpret the results in the areas of Physiology, Ecology, Cell Biology, Genetics, Applied Zoology, Biochemistry, Animal Biotechnology, Immunology and Research Methodology.	PO - 1, PO - 2, PO - 3
5.	Demonstrate subject related and transferable skills that are relevant to Zoology related job trades and employment opportunities.	PO - 1, PO - 2, PO - 4, PO - 5, PO - 6

UG COURSE PATTERN - 2020 - 2023 (UGC / TANSICHE/ MTU)

Sem.	Part	Code	Title of the Course	Hours	Credit
I	I	20GT1GS01/	Tamil - I	6	3
		20GH1GS01/	Hindi - I		
		20GF1GS01	French - I		
	II	20GE1GS01	English - I	6	3
	III	20ZO1MC01	Invertebrate Diversity	7	6
		20ZO1CP01	Invertebrate and Chordate Diversity - Lab	2	-
		20CH1AC01	Allied Chemistry - I	3	3
		20CH1AP01	Allied Chemistry - I - Lab	2	1
	IV	20ZO1AE01	Ability Enhancement Compulsory Course (AECC)- 1: Professional English	2	2
	IV	20SE1CE1D	Skill Enhancement Compulsory Course (SECC)- 1: Computer Education	2	2
	V	20STPNS01/ 20STPNC01/ 20STPPE01	Students Training Programme: National Service Scheme/ National Cadet Corps/ Physical Education	-	-
			Total	30	20
II	I	20GT2GS02	Tamil - II	6	3
		20GH2GS02	Hindi - II		
		20GF2GS02	French - II		
	II	20GE2GS02	English - II	6	3
	III	20ZO2MC02	Chordate Diversity	7	7
		20ZO2CP01	Invertebrate and Chordate Diversity - Lab	2	2
		20CH2AC02	Allied Chemistry - II	3	3
		20CH2AP02	Allied Chemistry - II - Lab	2	1
	IV	20AE2ES02	Ability Enhancement Compulsory Course (AECC)- 2: Environmental Studies	2	2
	IV	20SE2CB02	Skill Enhancement Compulsory Course (SECC)- 2: Capacity Building	2	2
	V	20STPNS01/ 20STPNC01/ 20STPPE01	Students Training Programme: National Service Scheme/ National Cadet Corps/ Physical Education	-	-
			Total	30	23

Sem.	Part	Code	Title of the Course	Hours	Credit
III	I	20GT3GS03	Tamil - III	6	3
		20GH3GS03	Hindi - III		
		20GF3GS03	French - III		
	II	20GE3GS03	English - III	6	3
	III	20ZO3MC03	Animal Physiology	7	7
		20ZO3CP02	Animal Physiology and Evolutionary Biology - Lab	2	1
		20BO3AC03	Allied Botany - I	3	3
		20BO3AP03	Allied Botany - I - Lab	2	1
		20ZO3DE1A/ 20 ZO3DE1B	Discipline Specific Elective - 1 Evolutionary Biology / Aquatic Zoology	4	3
	V	20STPNS01/ 20STPNC01/ 20STPPE01	Students Training Programme: National Service Scheme/ National Cadet Corps/ Physical Education	-	-
			Total	30	21
IV	I	20GT4GS04/ 20GH4GS04/ 20GF4GS04	Tamil - IV Hindi - IV French - IV	6	3
	II	20GE4GS04	English - IV	6	3
	III	20ZO4MC04	Biochemistry	7	7
		20ZO4CP03	Biochemistry - Lab	2	1
		20BO4AC04	Allied Botany - II	3	3
	III	20BO4AP04	Allied Botany - II - Lab	2	1
	III	20ZO4DE2A/ 20ZO4DE2B	Discipline Specific Elective - 2 Genetic Engineering and Biotechnology/ Endocrinology	4	3
	V	20STPNS01/ 20STPNC01/ 20STPPE01	Students Training Programme: National Service Scheme/ National Cadet Corps/ Physical Education	-	2*
	V	20SLPEX01	Service Learning Programme - Extension JACEP	-	-
			Total	30	21+2*

Sem.	Part	Code	Title of the Course	Hours	Credit
V	III	20ZO5MC05	Cell Biology	6	6
	III	20ZO5MC06	Genetics	6	6
	III	20ZO5MC07	Biostatistics and Bioinformatics	6	6
	III	20ZO5CP04	Cell Biology, Genetics, Biostatistics and Reproductive Biology - Lab	4	2
	III	20ZO5DE3A/ 20ZO5DE3B	Discipline Specific Elective - 3 Human reproductive Biology / Wild Life Conservation and Management	4	3
	IV	20ZO5GE01/ 20GE5NC01	Generic Elective - 1 (NME) Global Environmental issues NCC - National Integration and Personality Development	2	2
	IV	20SE5AB03	Skill Enhancement Compulsory Course (SECC) - 3: Aptitude Building	2	2
	V	20SLPEX01	Service Learning Programme - Extension JACEP	-	4*
			Total	30	27+4*
VI	III	20ZO6MC08	Immunology	6	6
	III	20ZO6MC09	Microbiology	6	6
	III	20ZO6MC10	Clinical Lab Technology	6	6
	III	20ZO6CP05	Immunology, Microbiology and Clinical Lab Technology - Lab	4	3
	III	20ZO6SE4A/ 20ZO6SE4B	Discipline Specific Elective - 4 Livestock Management and Animal Husbandry / Agrochemicals and Pest Management	4	3
	IV	20ZO6GE02/ 20GE6NC02	Generic Elective - 2 (NME) Food, Nutrition and Health/ NCC - Organization and Health Programme in NCC	2	2
	IV	20SE6ZO04	Skill Enhancement Compulsory Course (SECC) - 4: Bee Keeping	2	2
	V	20ZO6SS01/ 20ZO6SM01	Self Study Course: Bionomics MOOCs	-	2*
			Total	30	28+2*
			Total	180	140+8*

* Extra Credits - Self Study Paper, MOOCs

CERTIFICATE COURSE

Code	Title of the Course	Hours	Credit
20ZO1SD01	Skill Development Programme (SDP) Mushroom culture	60	2

CERTIFICATE COURSE ON GANDHIAN THOUGHT

Code	Title of the Course	Hours	Credit
CCHYGT01	Life of Mahatma Gandhi	60	2
CCHYGT02	Non Violence And Sarvodaya		

CONTINUOUS INTERNAL ASSESSMENT COMPONENT (CIA)

THEORY:

Component	Marks	Marks
Internal Test I	40	Converted to 25
Internal Test II	40	
Quiz	10	
Assignment	5	
Attendance	5	
Total	100	25

CONTINUOUS INTERNAL ASSESSMENT COMPONENT (CIA)

Practical can be decided by the respective Dept.

PASSING MINIMUM

Semester Examination	
Theory	40% out of 75 Marks (i.e. 30 Marks)
Practical	40% out of 60 Marks (i.e. 24 Marks)

EXTERNAL QUESTION PATTERN

Part - A

10 Questions \times 1Mark = 10 Marks

(Two Questions from each Unit)

Part - B

5 Questions \times 5 Marks = 25 Marks

(Internal Choice and one set of Question from each Unit)

Part - C

4 Questions \times 10 Marks = 40 Marks (4 Questions out of 6)

(Open Choice and atleast one Question from each Unit)

INTERNAL QUESTION PATTERN

Part - A

10 Questions \times 1Mark =10 Marks

Part - B

2 Questions \times 5 Marks = 10 Marks

(Internal Choice)

Part - C

2 Questions \times 10 Marks = 20 Marks (2 Questions out of 3)

(Open Choice and at least one Question from allotted Units)

INVERTEBRATE DIVERSITY

Semester: I

Hours: 7

Code : 20ZO1MC01

Credits: 6

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Discuss the basic principles of taxonomy, nomenclature, levels of structural organization, locomotion, spicules in poriferans and canal system in sponges.	PSO - 1, PSO - 5	K, C
CO - 2	Acquire clear knowledge on corals, coral reefs, polymorphism and parasitic adaptations of helminthes.	PSO - 1, PSO - 5	K, C, An
CO - 3	Discuss the common helminth parasites of human and domestic animals and economic importance of earthworms.	PSO - 1, PSO - 3, PSO - 5	K, C, An
CO - 4	Analyse the larval forms of crustaceans, insect metamorphosis and control of pest.	PSO - 1, PSO - 4, PSO - 5	K, C, An, Ap
CO - 5	Describe the oyster culture, pearl culture and water vascular system.	PSO - 1, PSO - 5	K, C, E

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I		INVERTEBRATE DIVERSITY										Hours: 7
Code : 20ZO1MC01												Credits: 6
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	4	2	2	2	3	4	5	2	2	2	5	3.00
CO - 2	3	2	3	2	3	5	5	2	3	3	5	3.27
CO - 3	4	2	2	2	2	4	5	3	3	2	5	3.09
CO - 4	4	2	3	2	3	4	5	2	2	2	5	3.09
CO - 5	4	2	3	2	2	4	5	2	2	3	5	3.09
Overall Mean Score												3.11

Result: The Score for this Course is 3.11 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I

Principles of Taxonomy , Binomial Nomenclature, Classification of Animal Kingdom. **Levels of organization:** Grades of organization, symmetry and coelom. **Protozoa:** General characters and classification upto class with an example. Type study - *Paramecium*. Locomotion and Nutrition in Protozoa. **Porifera:** General characters and classification up to classes with an example. Type study - *Leucosolenia*. Canal system in sponges. (21 Hours)

UNIT II

Coelenterata: General characters and classification upto class with an example. Type study - *Obelia*. Corals, Coral reefs and their significance, Polymorphism in coelenterates. **Platyhelminthes:** General characters and classification upto class with an example. Type study - Liver fluke. Parasitic adaptations in Platyhelminthes. (21 Hours)

UNIT III

Aschelminthes: General characters and classification upto class with an example. Type study - *Ascaris*. **Annelida:** General characters and classification upto class with an example. Type study - Earthworm. Metamerism, Economic importance of earthworm. (21 Hours)

UNIT IV

Arthropoda: General characters and classification upto class with an example. Type study - Prawn (*Penaeus*): Cephalic, thoracic, abdominal appendages and larval forms. Beneficial insects - Honey bee and Silk worm. Arthropod vectors - Mosquito, Housefly, Pest of Paddy (*Leptocoryza varicornis*), Coconut (*Oryctes rhinocerus*), Cotton (*Earias fabia*) and Sugarcane (*Pyrilla perpusilla*), Mouth parts of insects. Metamorphosis in insect. (21 Hours)

UNIT V

Mollusca: General characters and classification upto class with an example. Type study - *Pila* - External morphology, Pallial complex, Digestive system, Sense organs, Reproductive system. Adaptations of foot in mollusc. Oyster culture and Pearl industry in India. **Echinodermata:** General characters and classification upto class with an example. Type study - Star fish - External morphology, Pedicellaria, Digestive system, Sense organs and Reproductive system. Larval forms of Echinoderms, Water vascular system in Echinoderms. (21 Hours)

COURSE BOOK:

- Nair, N.C., Leelavathy, S., Soundara Pandian, N., Murugan, T. & Arumugam, N. (2012). A Textbook of Invertebrates. Saras Publication, Nagercoil.

BOOKS FOR REFERENCE:

1. Jordan, E.L. & Verma, P.S. (2010). Invertebrate Zoology. S. Chand & Co. Ltd. New Delhi.
2. Kotpal, R.L. (2004). Modern Textbook of Zoology- Invertebrates (9th ed.). Rastogi Publications, Meerut.
3. Ayyar, E.K. & Ananthakrishnan, T.N. (1992). Manual of Zoology, Vol. I (Invertebrata), *Part I & II*. S. Viswanathan Printers and Publishers Pvt. Ltd. Madras.
4. Dhami, P.S. & Dhami, J.K. (1979). Invertebrate Zoology. Ram Nagar, S.Chand & Co. Ltd., New Delhi.
5. Hickman, C.P. Jr., Hickman, F.M. & Roberts, L.S. (1984). Integrated Principles of Zoology (7th ed.). St. Louis: Times Merror / Mosby College Publication.
6. Jain, A.P. (2002). Biology of Invertebrates (4th Ed.). Tata McGraw-Hill Publishing Company Ltd. New Delhi.

INVERTEBRATE AND CHORDATE DIVERSITY - LAB

Semester: I

Code : 20ZO1CP01

COURSE OUTCOMES:

Hours: 2

Credits: -

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Compare the general biology of few Invertebrates.	PSO - 1, PSO - 3	K, C, An
CO - 2	Recognize the major groups of invertebrates.	PSO - 1, PSO-2, PSO-5	K, Ap, An
CO - 3	Locate the invertebrate animals in their specific taxonomic position.	PSO - 1, PSO - 5	An, Ap
CO - 4	Mount the body setae of earthworm.	PSO-1, PSO-4	K, Ap
CO - 5	Compare the mouth parts of honey bee and mosquito.	PSO-1, PSO-4	K, Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I		INVERTEBRATE AND CHORDATE DIVERSITY - LAB										Hours: 2
Code : 20ZO1CP01												Credits: -
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	4	2	2	2	2	3	5	3	2	4	4	3.00
CO - 2	4	2	2	2	2	4	5	2	2	3	5	3.00
CO - 3	4	2	3	2	2	3	5	3	2	4	5	3.18
CO - 4	4	2	3	2	2	4	5	2	2	3	4	3.00
CO - 5	4	2	3	2	2	5	5	2	2	2	5	3.09
Overall Mean Score												3.05

Result: The Score for this Course is 3.05 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

External Characters

Earthworm, Cockroach

Dissection:

Cockroach - Digestive system
- Nervous system

Mounting:

Body setae of Earthworm

Mouth Parts of Honey Bee, Cockroach and Mosquito

Sting of Honey Bee

Spotters:

Amoeba, Paramecium, Euglena, Tubipora, Liver fluke, Tapeworm, Planaria, Ascaris (Male and Female), Nereis, Peripatus, Limulus, Millipede, Centipede, Prawn, Nauplius larva, Zoea larva, Sepia, Octopus, Chiton, Sea urchin, Sea Cucumber, Starfish.

ALLIED ZOOLOGY - I

Semester: I

Hours: 3

Code : 20ZO1AC01

Credits: 3

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Equip them for self employment.	PSO - 2, PSO - 5	K, Ap, An
CO - 2	Gain knowledge on bee keeping and the importance of honey and its medicinal value.	PSO - 3, PSO - 4, PSO - 5	K, Ap
CO - 3	Estimate the economic importance of silk worm.	PSO - 1, PSO - 4	K, Ap
CO - 4	Design their career in aquaculture.	PSO - 4, PSO - 5	Ap, E
CO - 5	Attain knowledge on Dairy farming.	PSO - 5	K, Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I		ALLIED ZOOLOGY - I										Hours: 3
Code : 20ZO1AC01												Credits: 3
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	4	2	2	2	4	5	5	3	2	5	5	3.55
CO - 2	4	2	2	2	2	5	5	3	2	5	5	3.36
CO - 3	4	2	2	2	3	4	5	4	2	5	5	3.45
CO - 4	4	2	2	2	2	5	5	5	2	5	5	3.55
CO - 5	4	3	2	2	2	5	5	5	2	5	5	3.64
Overall Mean Score												3.51

Result: The Score for this Course is 3.51 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I

Vermitechnology: Scope of Vermitechnology, Importance of Vermitechnology, Collection, Methods of Collection of Earthworm. Vermiculture techniques, Methods of vermicomposting, worm cast, worm wash. Species of earth worm: - *Perionyx excavates*, *Lumbricus rubellus*. Diseases of earth worm -Blister disease, *Rhizoctonia solani*. (9 Hours)

UNIT II

Bee Keeping: Scope of bee keeping, Identification of Honey Bees, Choice of Bee in Apiculture, Principles of Beekeeping, Hives, Appliances of Apiaries, Honey Extraction, Honey, Bees - Wax, Bee Venom, Swarming, Queen Rearing. Diseases of honey bee - Acariasis, Varroaosis. (9 Hours)

UNIT III

Sericulture: Scope of Sericulture, Sericulture in India, Sericulture as a cottage Industry, Moriculture, biology Silk worms, Types of silk worm - Eri, Muga, Tasar. Rearing of Silk worms, Silk Reeling. Disease of silk worm - Grasserie, flacherie. (9 Hours)

UNIT IV

Aquaculture: Scope of Aquaculture, Culture of Indian Major Carps - Catla, Tilapia Culture, Culture of Freshwater Prawns, Integrated Fish Farming, Live Feed Culture - Artemia culture, Oyster Culture. Diseases of fishes - Swim bladder disease, Fin rot disease. (9 Hours)

UNIT V

Dairy Farming: Scope of Dairy Farming, Dairy Animals - Red sindhi cattle, Ongoli cattle, Khillari cattle, Bargur cattle. Management of a model dairy farm, Formulation of standards for pasteurization, Artificial insemination in cattle. Diseases of cattle - Blackleg and Bovine Viral Diarrhea. (9 Hours)

BOOKS FOR REFERENCE:

1. Arumugam N., Murugan S., Johnson Rajeshwar and Ram Prabhu R., (2005). Applied zoology. Saras Publications, Kanyakumari.
2. Harbans Singh Earl N. Moore., (1982). Live stock and poultry production and prentice. Hall of India Pvt. Ltd, New Delhi.
3. Jameson J.D and Santhanam R., (1996). Manual of Ornamental Fishes and Farming Technologies. Fisheries College and Research Institute, Tuticorin.
4. Ganga G., and Sulochana Chetty (1991). An introduction to sericulture. Oxford & IBH Publishing Company.
5. Kichisaburo M. (1997). Moriculture - Science of mulberry cultivation. Oxford & IBH.

ALLIED ZOOLOGY - I - LAB

Semester: I

Hours: 2

Code : 20ZO1AP01

Credits: 1

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Mount the body setae of earthworm.	PSO - 2, PSO - 4	An, E
CO - 2	Gain knowledge on bee keeping and the importance of honey and its medicinal value.	PSO - 1, PSO - 4, PSO - 5	K, An, Ap
CO - 3	Estimate the economic importance of silk worm.	PSO - 3, PSO - 4, PSO - 5	Ap, An
CO - 4	Design their career in aquaculture.	PSO - 4, PSO - 5	K, Ap, E
CO - 5	Attain knowledge on Dairy farming.	PSO - 2, PSO - 5	Ap, E

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I		ALLIED ZOOLOGY - I - LAB										Hours: 2
Code : 20ZO1AP01												Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	4	2	2	2	2	4	3	3	2	5	4	3.00
CO - 2	5	2	2	2	2	4	3	4	2	5	5	3.27
CO - 3	5	2	2	2	2	4	4	3	2	5	5	3.27
CO - 4	5	3	2	2	2	5	4	4	2	5	5	3.55
CO - 5	5	3	3	2	2	5	4	4	2	5	5	3.64
Overall Mean Score												3.35

Result: The Score for this Course is 3.35 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

1. MOUNTING:

Body setae of earthworm

Mouth parts of Honey bee

Honey bee sting

Appendages of prawn

2. Preparation of vermicompost.

3. Extraction of honey.

4. Study on selection of mulberry leaves to appropriate size according to different stage of growth of larva.

5. Life history of silk moth- Egg ,larva, pupa, adult. (Chart).

6. Visit to local dairy farm and report submission.

7. Field visit to sericulture farm and report submission.

SPOTTERS:

Perionyx excavates, *Rhizoctonia solani* , Worm wash, Worm cast, *Apis indica*, Bee wax, *Bombyx mori*, Chandrika, Rearing tray, Rearing stand, Hive, Honey extractor Smoker, Tilapia, Carp, Prawn, Oyster, Artemia.

PROFESSIONAL ENGLISH

Semester: I

Hours: 2

Code : 20ZO1AE01

Credits: 2

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Recognise their own ability to improve their competence in using the language	PSO-1, PSO-4	C,AP, S
CO - 2	Use language for speaking with confidence in an intelligible and acceptable manner	PSO-1, PSO-4, PSO-3,PSO-5	C, AP, E
CO - 3	Read independently unfamiliar texts with comprehension	PSO-2, PSO-3, PSO-5	K,C,AP,E
CO - 4	Comprehend the importance of reading for life and writing in academic life.	PSO-1, PSO-3, PSO-4, PSO-5	C,AP, E
CO - 5	Write simple sentences without committing error of spelling or grammar	PSO-4	C,E

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester : I		PROFESSIONAL ENGLISH										Hours: 2
Code : 20ZO1AE01												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO-1	4	4	4	4	4	4	4	3	4	4	4	3.90
CO-2	3	4	4	4	4	4	4	3	4	4	4	3.81
CO-3	4	3	3	3	4	4	4	4	3	3	4	3.63
CO-4	3	4	4	3	4	4	4	3	3	3	4	3.54
CO-5	3	4	3	3	3	3	3	4	4	4	4	3.45
Overall Mean Score												3.68

Result: The score for this course is 3.68 (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

NB: All four skills are taught based on texts/passages.

UNIT I: COMMUNICATION

Listening: Listening to audio text and answering questions - Listening to Instructions

Speaking: Pair work and small group work.

Reading: Comprehension passages –Differentiate between facts and opinion

Writing: Developing a story with pictures.

Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT II: DESCRIPTION

Listening: Listening to process description.-Drawing a flow chart.

Speaking: Role play (formal context)

Reading: Skimming/Scanning-

Reading passages on products, equipment and gadgets.

Writing: Process Description –Compare and Contrast

Paragraph-Sentence Definition and Extended definition-Free Writing.

Vocabulary: Register specific -Incorporated into the LSRW tasks.

UNIT III: NEGOTIATION STRATEGIES

Listening: Listening to interviews of specialists / Inventors in fields (Subject specific)

Speaking: Brainstorming.(Mind mapping). Small group discussions (Subject-Specific)

Reading: Longer Reading text.

Writing: Essay Writing (250 words)

Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT IV: PRESENTATION SKILLS

Listening: Listening to lectures.

Speaking: Short talks.

Reading: Reading Comprehension passages

Writing: Writing Recommendations

Interpreting Visuals inputs

Vocabulary:Register specific -Incorporated into the LSRW tasks

UNIT V: CRITICAL THINKING SKILLS

Listening: Listening comprehension- Listening for information.

Speaking: Making presentations (with PPT- practice).

Reading :Comprehension passages –Note making.

Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills)

Writing: Problem and Solution essay– Creative writing –Summary writing

Vocabulary: Register specific - Incorporated into the LSRW tasks

COURSE BOOK:

- English For Life Sciences by Tamil Nadu State Council for Higher Education

INTERNAL ASSESSMENT	
COMPONENTS	MARKS
Test-I	30
Test-II	30
Listening Comprehension	10
Reading Comprehension	10
Language lab (Speaking skills)	10
Assignment	10
Total	100

PROFESSIONAL ENGLISH - 20ZO1AE01**QUESTION PATTERN****Time: 1 Hour****Max. Marks: 30**

- | | |
|---|----|
| I. Match the following (or) True or False | 10 |
| II. Writing Definition (or) Transcript of a passage | 5 |
| III. Sketch mind maps for the following (or) Essay Writing | 10 |
| IV. Comprehension on short talks (or) Writing Recommendations | 5 |

CHORDATE DIVERSITY

Semester: II

Hours: 7

Code : 20ZO2MC02

Credits: 7

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Comprehend the structural and functional organization of chordates.	PSO - 1, PSO - 2	C, K, An
CO - 2	Elucidate the parental care in Amphibians and migration in fishes.	PSO - 2, PSO - 3	K, An
CO - 3	Identify poisonous and non-poisonous snakes and acquire knowledge of first aid for snake bite.	PSO - 2, PSO - 5	K, S, E
CO - 4	Appreciate the flight adaptation in birds.	PSO - 4, PSO - 5	K, An
CO - 5	Explicate the aquatic mammals.	PSO - 1, PSO - 2	K, Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II		CHORDATE DIVERSITY										Hours: 7
Code : 20ZO2MC02												Credits: 7
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	2	2	2	2	4	5	4	2	3	4	3.18
CO - 2	5	2	2	2	3	4	5	4	2	2	4	3.18
CO - 3	4	2	2	2	2	4	5	4	2	3	4	3.09
CO - 4	5	2	2	2	2	4	5	5	2	2	4	3.18
CO - 5	4	2	2	2	2	4	5	5	2	3	4	3.18
Overall Mean Score												3.16

Result: The Score for this Course is 3.16 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I

Prochordata: General characters and outline classification of chordate up to orders. Prochordata: General characters and classification of prochordata up to orders, Type study: *Balanoglossus* - External characters, digestive system, respiratory system, reproductive system. General characters of Ascidian and Amphioxus. General Topics - Retrogressive metamorphosis of Ascidian tadpole larva. (21 Hours)

UNIT II

Pisces and Amphibia: Pisces: General characters and classification of Pisces upto orders. Type study: *Scoliodon* - External characters, Digestive systems, Respiratory system, Circulatory system, Lateral line receptors. Amphibia: General characters and classification of Amphibia up to orders. Type study: *Rana tigrina* - External characters, respiratory system, circulatory system, urinogenital system. General topics - Migration of fishes, Parental care in Amphibia. (21 Hours)

UNIT III

Reptilia: General characters and classification of Reptilia up to orders. Type study: *Calotes versicolor* - External characters, digestive system, respiratory system, circulatory system and urinogenital system. General Topics - Identification of poisonous and non - poisonous snakes, Snake Venom and anti - venom, Biting mechanism, Golden age of reptiles. (21 Hours)

UNIT IV

Aves: General characters and classification of Aves up to orders. Type study: Pigeon - *Columba livia* - External characters, digestive system, respiratory system, circulatory and urinogenital system. General Topics - Flight adaptation, Migration in birds, Flightless birds. (21 Hours)

UNIT V

Mammalia: General characters and classification of Mammalia upto orders. Type Study: Rabbit - External characters, digestive system, respiratory system, circulatory system and urinogenital system. General Topics - Aquatic mammals, Dentition in mammals, Stomach in mammals, skeletal system in mammals (Axial and Appendicular), Placentation in mammals. (21 Hours)

COURSE BOOK:

- Arumugam, N., Thangamani, A., Prasanna Kumar, S., and Narayanan, L.M. (2013), A text book of Chordates, Saras publication, Nagercoil.

BOOKS FOR REFERENCE:

1. Ekambaranatha Ayyar, M. (1971). A manual of zoology. part-II (Chordate) S. Viswanathan Printers and Publishers Pvt. Ltd., Chennai.
2. Ekambaranatha Ayyar, M. and T.N. Anathakirshnan.(1985). A manual of zoology. Vol-II (Chordate)Viswanathan Printers and Publishers Pvt. Ltd., Chennai.
3. Jordan, K.L. and P.S. Verma.(1998). Chordate of zoology (11th Edition).S. Chand and Company Ltd, New Delhi.
4. Kardong, K, (2002). Vertebrates: Comparative Anatomy, Function and Evolution. Tata McGraw Hill Publishing Company Ltd, Chennai.
5. Kotpal, R.L. (2005). Morden text book of zoology-Vertebrates. Rastogi Publications, Meerut.
6. Dhami P.S and Dhami J.K. (1972). Chordate of Zoology R. Chand and Company Ltd, New Delhi.

INVERTEBRATE AND CHORDATE DIVERSITY - LAB

Semester: II

Hours: 2

Code : 20ZO2CP01

Credits: 2

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Identify and compare the general biology of few chordates.	PSO - 1, PSO - 3	K, An
CO - 2	Describe the structure of placoid scales in shark.	PSO - 1, PSO - 2	C, E
CO - 3	Report on beak and feet adaptation of birds.	PSO - 4, PSO - 5	K, Ap, An
CO - 4	Collect and submit feathers of any five birds.	PSO - 3, PSO - 5	K, Ap, C
CO - 5	Identify the birds in the college campus and submit the report.	PSO - 4, PSO - 5	K, Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II		INVERTEBRATE AND CHORDATE DIVERSITY - LAB										Hours: 2
Code : 20ZO2CP01												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	2	2	2	2	5	5	5	2	3	4	3.36
CO - 2	4	2	2	2	2	4	5	3	2	2	3	2.82
CO - 3	5	2	2	2	2	4	5	4	2	3	4	3.18
CO - 4	5	2	3	2	3	4	5	3	2	3	4	3.27
CO - 5	5	2	2	2	2	4	5	4	2	3	3	3.09
Overall Mean Score												3.14

Result: The Score for this Course is 3.14 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

1. Mounting of placoid scales in shark.
2. Identification of any five local edible fishes.
3. Study of any five venomous and non-venomous snakes.
4. Feet and Beak adaptations of any five birds.
5. Collection and submission of feathers of any five birds.

SPOTTERS:

Balanoglossus, Amphioxus, Ascidian, Scoliodon, Echenies (Sucker fish), Anguilia (Eel), *Catla catla*, Clarias, Hippocampus, Rana, Bufo, Salamander, Chameleon, Draco, Parrot, Duck, Woodpecker, Kingfisher, Pelican, House Sparrow, Echidna, Macropus, Bat, Sperm whale and Hippopotamus.

ALLIED ZOOLOGY - II

Semester: II

Hours: 3

Code : 20ZO2AC02

Credits: 3

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Equip them for self employment by poultry farming.	PSO - 2, PSO - 5	K, Ap
CO - 2	Apply knowledge on mushroom culture.	PSO - 3, PSO - 4	S, K, Ap
CO - 3	Elucidate the food preservation methods.	PSO - 1, PSO - 3	C, Ap
CO - 4	Enlist the industrially important microorganisms.	PSO - 4, PSO - 5	K, An, Ap
CO - 5	Attain knowledge on Industrial microbiology.	PSO - 4, PSO - 5	S, K, An

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II		ALLIED ZOOLOGY - II										Hours: 3
Code : 20ZO2AC02												Credits: 3
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	4	2	2	5	4	5	2	5	5	4.00
CO - 2	5	5	4	2	3	5	3	5	2	5	5	4.00
CO - 3	5	5	4	2	2	5	3	5	3	4	5	3.91
CO - 4	5	4	3	2	3	5	3	5	4	4	5	3.91
CO - 5	5	5	2	2	2	5	3	5	4	4	5	3.82
Overall Mean Score												3.93

Result: The Score for this Course is 3.93 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I

Poultry Farming: Scope of poultry farming, nutritive value of egg and meat, common breeds of fowl - Vanaraja, Kadaknath, Poultry housing and equipment, incubation, collection and storage of eggs. Fumigation, hatchery sanitation, sexing, de - beaking and de - worming. Rearing and management of broiler and layer. Poultry diseases - Ranikhet disease and Fowl pox. (9 Hours)

UNIT II

Mushroom Culture: Scope of mushroom culture, nutritive value, spawn production, preparation of culture, mother spawn production for oyster mushroom, multiplication of spawn, cultivation techniques, harvesting, packing and storage, problems in cultivation. Identification of edible (*Agaricus bisporus*, *Pleurotus ostreatus*) and poisonous type (*Conocybe filaris*, *Amanita phalloides*). Processing and preservation of mushrooms (9 Hours)

UNIT III

Food Microbiology: Fermented food products - Yoghurt (milk), sauerkraut (vegetables), leavening of bread. Microbial spoilage of meat, milk, fruits, vegetables and canned food in brief. Food infection (Salmonellosis) and food poisoning (Botulism). Food preservation methods (9 Hours)

UNIT IV

Industrial Microbiology: Role of microbes in industrial process- production, assisting and waste disposal microbes. Types of fermenters - batch and continuous fermentation. Methods of fermentation- solid substrate and submerged fermentation. (9 Hours)

UNIT V

Industrial Microbiology: Production of organic acid (Ethanol), amino acid (glutamic acid), large scale production of antibiotics - Penicillin, enzyme - amalyse, hormone - Insulin and vaccine - BCG and fermented food products - wine. Single cell protein culture. (9 Hours)

BOOKS FOR REFERENCE:

1. Arumugam N., Murugan S., Johnson Rajeshwar and Ram Prabhu R., (2005).
Applied zoology. Saras Publications, Kanyakumari.
2. Harbans Singh Earl N. Moore., (1982). Live stock and poultry production and
prentice. Hall of India Pvt. Ltd, New Delhi.
3. John William, S. (2003). Poultry for Sustainable Food Production and Livelihood.
Loyola Publication, Chennai.
4. Banerjee, G. C., (1992). Poultry, Oxford and IBH, New Delhi.
5. Gupta P.K., (2003). Elements of Biotechnology, Rastogi publications.
6. Pelcezar M.J., (1993) Microbiology and Reid. RcGraw Hill Book Company, New
York.
7. Nita Bhal. (2002). Handbook on Mushrooms (4th ed.). Vijay Primlani for Oxford
and IBH Publishing Co. Pvt. Ltd., New Delhi.
8. Tripathi, D.P. (2005) Mushroom Cultivation, Oxford & IBH Publishing Co. PVT.
LTD, New Delhi.

ALLIED ZOOLOGY - II - LAB

Semester: II

Hours: 2

Code : 20ZO2AP02

Credits: 1

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Equip them for self employment by poultry farming.	PSO - 3, PSO - 5	K, Ap, E
CO - 2	Apply knowledge on mushroom culture.	PSO - 1, PSO - 4	C, Ap, E
CO - 3	Demonstrate the food preservation methods.	PSO - 2, PSO - 4	An, S
CO - 4	Elucidate on sterilization techniques.	PSO - 3	K, Ap
CO - 5	Apply the knowledge on Industrial biotechnology.	PSO - 4, PSO - 5	K, Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II		ALLIED ZOOLOGY - II - LAB										Hours: 2
Code : 20ZO2AP02												Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	4	2	2	5	2	5	2	5	5	3.82
CO - 2	5	5	4	2	2	5	2	5	2	5	5	3.82
CO - 3	5	4	3	2	2	5	2	5	2	5	5	3.64
CO - 4	5	5	4	2	2	5	2	5	2	5	4	3.73
CO - 5	5	5	3	2	2	5	2	5	2	5	4	3.64
Overall Mean Score												3.73

Result: The Score for this Course is 3.73 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

1. Spawn production of mushroom.
2. Visit to poultry farm.
3. Collection of eggs.
4. Assessment of air pollution.
5. Cleaning and sterilization of glasswares.
6. Preparation of culture media for microbes.
7. Study of microbial population in raw milk and soil.

SPOTTERS:

Breeds of fowl - Gramapriya, Vanaraja, Kadaknath. Model poultry house, Dropping pit, Water basin, Nipple drinker, Sauerkraut, Edible mushroom - Button (white) mushroom, Chanterelle (Girolle), Oyster Mushroom, Enoki (snow puff), Non - Edible mushroom - Death cap - *Amanita phalloides*, *Conocybe filaris*, Webcaps cortinarius species, Fermentor, Biosensor, Yoghurt, *Rhodospirillum rubrum*.

**CERTIFICATE COURSE
MUSHROOM CULTURE**

Code : 20ZO1SD01

Hours: 60

Credits: 2

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Identify the types of mushrooms.	PSO-1, PSO- 5	K, An
CO - 2	Prepare culture media, Produce mother culture and mushroom spawn.	PSO-1, PSO-4, PSO - 5	Ap
CO - 3	Select substrate, bed preparation, casting preparation and running of mushroom beds.	PSO - 4, PSO - 5	K, Ap
CO - 4	Manage diseases, pests, nematodes, weed moulds of <i>Agaricus bisporus</i> and <i>Pleurotus ostreatus</i> .	PSO - 1, PSO - 2, PSO - 5	K, Ap
CO - 5	Analyse the post harvesting methods and value added product production.	PSO - 1, PSO - 4, PSO - 5	K, An, S

**RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES**

Code : 20ZO1SD01		MUSHROOM CULTURE										Hours: 60
												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	2	2	2	2	4	3	2	2	5	4	3.00
CO - 2	5	3	3	2	2	5	3	2	2	5	5	3.36
CO - 3	5	2	3	2	2	5	3	2	2	5	5	3.27
CO - 4	5	2	2	2	2	4	3	4	2	5	4	3.18
CO - 5	5	2	2	2	2	5	3	3	2	5	5	3.27
Overall Mean Score												3.22

Result: The Score for this Course is 3.22 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I

Mushroom - Introduction - Types of mushrooms: Edible, non-edible mushrooms and medicinal mushrooms. Biology of mushrooms; importance and nutritive value of edible mushrooms.

UNIT II

Spawn Cultivation Technology: Sterilization, Preparation of culture media, production of mother spawn, multiplication of spawn, Inoculation Technique.

UNIT III

Mushroom Cultivation Technology, Substrates, composting technology, bed, polythene bag preparation, spawning, cropping, commercial cultivation of mushrooms casing; raw material used for casing, preparation of casing material; important sanitation during various stages of mushroom cultivation; factors influencing mushroom cultivation; cultivation of *Agaricus bisporus* and *Pleurotus ostreatus*.

UNIT IV

Mushroom Shed Problems in Cultivation - diseases, pests, nematodes, weed moulds of *Agaricus bisporus* and *Pleurotus ostreatus* and their management.

UNIT V

Post Harvest Technology - Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship. Value added products of mushrooms & marketing.

PREPARED COURSE MATERIAL

BOOKS FOR REFERENCE:

1. Nita Bhal. (2002). Handbook on Mushrooms (4th ed.). Vijay Primlani for Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Tripathi, D.P. (2005) Mushroom Cultivation, Oxford & IBH Publishing Co. PVT. LTD, New Delhi.
3. V.N. Pathak, Nagendra Yadav and Maneesha Gaur, (2000) Mushroom Production and Processing Technology/ Vedams E books Pvt. Ltd., New Delhi.

ENVIRONMENTAL STUDIES
PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO
1.	Endow with in-depth knowledge, analyze and apply the understanding of their discipline for the betterment of self and society.
2.	Synthesize ideas from various disciplines, enhance the interdisciplinary knowledge and extend it for research.
3.	Gain confidence and skills to communicate orally/ verbally in research platforms and state a clear research finding.
4.	Develop problem solving and computational skills and gain confidence to appear for the competitive examinations.
5.	Enhance knowledge regarding research by accumulating practical knowledge in specific areas of research.
6.	Achieve idealistic goals and enrich the values to tackle the societal challenges.

PSO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PO MAPPED
1.	Assess the scope and importance of environmental studies and need for public awareness	PO1,2,3
2.	Develop deeper understanding in classification of resources	PO 1,2,5
3.	Analyse the concept of an eco system	PO1,2,4,6
4.	Comprehend the definitions, causes and control measures of environmental pollutions	P O 1 ,5
5.	Participate in the environmental issues programmes from the unsustainable to sustainable development	PO 1 , 4,5,6

ENVIRONMENTAL STUDIES

Semester: II

Hours: 2

Code : 20AE2ES02

Credits: 2

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Recall the components of our planet earth.	PSO 1,2,4	K, A ,S
CO - 2	Elucidate the importance of the natural resources.	PSO 2,3,5	K, An, E
CO - 3	Summarise the energy status of the environment.	PSO1,2,5	K,A,An
CO - 4	Acquire knowledge on the conservation of our environment.	PSO1,4,5	K,AP,S
CO - 5	Analyse the significance of water and climate towards sustainable development.	PSO 2,3,5	K,An, Ap, S,E

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II		ENVIRONMENTAL STUDIES										Hours: 2
Code : 20AE2ES02												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	4	4	3	4	3	4	5	4	5	4	5	4.09
CO - 2	3	4	3	4	3	4	5	4	4	4	4	3.81
CO - 3	3	4	3	4	3	4	5	4	4	4	4	3.81
CO - 4	3	4	3	4	3	3	5	4	5	5	4	3.90
CO - 5	4	4	3	4	3	4	5	4	4	4	5	4.00
Overall Mean Score for COs												3.92

Result: The Score for this Course is 3.92 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I: MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, scope and importance - Need for public awareness **(2 Hours)**

UNIT II: NATURAL RESOURCES

Classification of Resources: Renewable and non - renewable resources - Forest resources, water resources, mineral resources, food resources, energy resources, Land resources - associated problems; Role of an individual in conservation of natural resources - Equitable use of sources for sustainable life styles. **(8 Hours)**

UNIT III: ECOSYSTEMS

Concept of an ecosystem - Structure and function of an ecosystem - producers, consumers and decomposers - Energy flow in the ecosystem - Food chains, food webs and ecological pyramids - Introduction, types, characteristic features, structure and function of the following Eco system: Forest, grass land, desert and aquatic. **(6 Hours)**

UNIT IV: ENVIRONMENTAL POLLUTION

Definition, Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards, Solid waste management, Role of an individual in prevention of pollution. **(8 Hours)**

UNIT V: SOCIAL ISSUES AND THE ENVIRONMENTS

From unsustainable to sustainable development - Urban problems related to energy Water conservation, rain water harvesting, water shed management, Resettlement and rehabilitation of people, its problem and concerns, case studies, Environmental ethics, Climate change, global warming, acid rain and ozone layer depletion, nuclear accidents and holocaust, case studies. Waste land reclamation. Environmental protection act, air act, water act, wild life protection act. **(6 Hours)**

FIELD WORK

Visit to local area to document environmental assets- river/forest/ grassland/hill/ mountain.

COURSE BOOK:

Murugesan, R., (2007). Environmental science and Engineering, Millenium publication, Madurai.

UNIT I : Section - 1.1 & 1.2

UNIT II : Section - 1.3 to 1.37

UNIT III : Section - 2.1 to 2.7 & 2.10 to 2.27

UNIT IV : Section - 3.1 to 3.37

UNIT V : Section - 4.1 to 4.17

Note: Tamil Version for Tamil Literature and History Tamil Medium Students.

Continuous Internal Assessment Component (CIA)

Theory:

Component	Marks
Internal test I	40
Internal test II	40
Quiz	10
Assignment	5
Attendance	5
Total	100

Continuous Internal Assessment Component (CIA)

Passing Minimum: 40% out of 100

Internal Question Pattern

Part - A

10 Questions × 1Mark =10 Marks

Part - B

2 Questions × 5 Marks = 10 Marks

(Internal Choice)

Part - C

2 Questions × 10 Marks = 20 Marks (2 Questions out of 3)

(Open Choice and atleast one Question from allotted Units)

SKILL ENHANCEMENT COMPULSORY COURSE (SECC -2)
CAPACITY BUILDING
PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO
1.	Fix healthy attitudes and standards to face the outside world.
2.	Develop healthy interpersonal, intrapersonal and social relationships.
3.	Analyze the portrayal of social issues depicted in films that help them aware of the issues and figure out ways to eliminate them.
4.	Identify the role of social media in the present scenario and adopt the positive changes.
5.	Build up qualities like team work, leadership and problem solving
6.	Improve perspectives on positive thinking, team work, and creativity

PROGRAMME SPECIFIC OUTCOMES

PSO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO	PO MAPPED
1.	Develop positive thinking that helps them to set and pursue for meaningful goals.	PO-1, 6
2.	Develop leadership qualities that lead them to inspire and guide people among peer groups and in workplaces.	PO-1, 2, 3, 6
3.	Assess the advantages and disadvantages of social media.	PO-2, 6
4.	Acquiring trade skills by developing social relationships effectively with trade experts.	PO-2,5,6
5.	Understand the portrayal of social causes in films	PO-3

CAPACITY BUILDING

Semester: II

Hours: 2

Code : 20SE2CB02

Credit: 2

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO – 1	Realised the importance of physical health, emotional well-being, and stress management.	PSO-1	K
CO – 2	Apply the features of team work and strive to become good leaders.	PSO-2,4	Ap
CO – 3	Enhance their awareness on social media and e- learning.	PSO-3	Sy
CO - 4	Develop interactive skills in online trade, and become value based professionals.	PSO-4	Ap
CO - 5	Acquire film making skills.	PSO-5	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester : II		CAPACITY BUILDING										Hours: 2
Code : 20SE2CB02												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO-1	4	4	4	4	4	5	4	4	5	4	4	4.18
CO-2	4	4	5	4	4	4	4	4	4	4	4	4.09
CO-3	4	3	4	4	4	3	4	4	4	4	4	3.81
CO-4	5	4	4	4	4	3	4	4	5	4	3	4
CO-5	4	4	5	4	4	4	3	4	4	4	4	4
Overall Mean Score												4.01

Result: The score for this course is 4.01 (Very high)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I

Positive thinking-Seven steps in dealing with doubts. Traits of positive thinking. Goal setting-techniques of positive thinking to achieve the goals-creativity and components of creativity (6 Hours)

UNIT II

Leadership - Types of Leadership - Team work and public speaking - Importance of maintaining good interpersonal relationship with Team - Motivation - Self confidence - Attitude - Working in Group - Time Management - Effective Planning. (6 Hours)

UNIT III

Skilful usage of Social media (Whatsapp, Twitter, Facebook, Instagram, other app). Cyber bullying, photo, video morphing & editing, fake news. Useful study apps, e learning apps, Health, Police, Lawyer help app, Social issues complaint app. (6 Hours)

UNIT IV

Online interaction with Experts – Mushroom Cultivation – Mrs. Arthi (Batlagundu) –Apiculture –Mrs. Josephine (Madurai), Garment making – Mr. Alagusundaram (Tirupur) - Terrace Garden – Mrs. Megala – (Madurai) – Spirulina Cultivation - D. Aarthi (Madurai) – Antenna Foundation, (Madurai) (6 Hours)

UNIT V

Film Review: Thani Oruvan , Peranmai, Dhangal, 36 Vayadhinile, Kaatrin Mozhi, Ratchasi, English Vinglish - Short Film Making–Submission of Short Film. (6 Hours)

BOOKS FOR REFERENCE:

1. Power of positive thinking, Mile, D.J.Rohan Book Company Delhi, 2004.
2. Dolmans 1922, A Handbook Public Speaking 1922, New York, Harcourt Breaee and company.
1. <http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/positive-thinking/art-20043950>.
2. <http://mayoclinic.org/healthy-lifestyle/stress-management/in-depth/3-simple-strategies-to-help-you-focus-and-de-stress/art-20390057>.
3. <http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/3-ways-to-become-more-stress-resilient/art-20267213>
4. <http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/3-ways-to-learn-patience-and-amp-up-your-well-being/art-20390072>
5. <http://www.mayoclinic.org/4-proven-ways-you-can-feel-happier/art-20390079>
6. <http://mayoclinic.org/healthy-lifestyle/adult-health/in-depth/anger-management/art-20048149>

7. <http://www.gaiam.com/blogs/discover/positive-thinking-strategies-to-help-you-achieve-your-goals#:text=Focus%20on%20what's%20of%20old%20failures.>
8. <http://www.linkedin.com/pulse/what-makes-positive-attitude-10-components-gary>
9. <http://ifflab.org/how-to-prevent-cyber-bullying-anti-cyber-bullying-law-in-india/>
10. <http://www.sciencedaily.com/terms/morphing.htm#:text=Morphing%20is%20special%20effect,little%20instruction%20from%20the%20user.>
11. <http://www.educationalappstore.com/>
12. <http://www.mobihealthnews.com/37340/38-more-health-and-wellness-apps-that-connect-to-apples-healthkit>
13. <http://www.youtube.com/watch?v=skfqt9mm7j4>
14. <http://www.youtube.com/watch?v=rvy44i-ciE>
15. <https://www.youtube.com/watch?v=rINOELMCiqc>
16. <http://www.youtube.com/watch?v=N5R-KCWPzr0&list=PLHw83ZMxtQ9NdRd5yAxYrxkRsqcvwiae@index=3>
17. <http://www.youtube.com/watch?v=PUzaLjSjERE>
18. <http://www.youtube.com/watch?v=QkVue8XmVr8>
19. <http://www.youtube.com/watch?v=XcRs4JBN43o>
20. <http://www.youtube.com/watch?v=dzvpQG-2xC4>

Continuous Internal Assessment Component (CIA)

Theory:

Component	Marks
Internal test I	40
Internal test II	40
Quiz	10
Assignment	5
Attendance	5
Total	100

Continuous Internal Assessment Component (CIA)

Passing Minimum: 40% out of 100

Internal Question Pattern

Part - A

10 Questions × 1Mark =10 Marks

Part - B

2 Questions × 5 Marks = 10 Marks

(Internal Choice)

Part - C

2 Questions × 10 Marks = 20 Marks (2 Questions out of 3)

(Open Choice and atleast one Question from allotted Units)

STREAM - D
COMPUTER EDUCATION

Semester: I

Hours: 2

Code : 20SE1CE1D

Credits: 2

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	COGNITIVE LEVEL
CO - 1	Bridge the fundamental concepts of computers with the present level knowledge of the students.	K
CO - 2	Acquaint the use of options in Word, and use of PowerPoint options to prepare slide shows.	K
CO - 3	Develop the analytical mind, critical and logical thinking to apply mathematical foundations through Excel sheets.	K
CO - 4	Realize the need of computer word option to write dissertation, projects, thesis and blogs.	K
CO - 5	Acquaint the use of Online Communication and Collaboration.	K

UNIT I: MS – WORD& MS -POWERPOINT

1. Starting MS – Word and typing Text, Number and symbols.
2. Formatting a text (Bold, Italic, Underline, Alignment)
3. Page setup (Applying page numbers, Header and Footer, Orientation, Drop cap)
4. Starting MS- Power point and creating a new presentation
5. Applying layouts to slides, transition and animations to slides

UNIT II : MS – EXCEL

1. Starting MS Excel and entering data
2. Sorting and filtering the data
3. Applying the statistical functions: maximum, minimum, result
4. Applying the mathematical functions: total, average, round
5. Creating the charts
 - a. Columns
 - b. Line
 - c. Pie
 - d. Bar

UNIT III: COMMUNICATIONS AND COLLABORATION

1. Basics of electronic mail
2. Getting an e- mail account
3. Sending and receiving emails
4. Document collaboration
5. Google meet& Google Classroom

BOOKS FOR REFERENCE:

1. "Comdex 9-in-1 DTP Course Kit", Vikas Gupta, Dreamtech Press 2011 Edition.
2. "Comdex 14- in -1 computer course Kit:\ Vikas Gupta, Dreamtech Press 2011 Edition.
3. Sinha, P.K. & Sinha, Prtri, Computer Fundamentals, BPB

Components for continuous Internal Assessment (CIA) Skill Enhancement**Compulsory Courses****QUESTION PATTERN**

Components	Marks
Test - I (Practical)	30
Test -II (Practical)	30
Record	30
Attendance	10
Total	100

NATIONAL CADET CORPS

NON MAJOR ELECTIVE

Sem.	Part	Code	Title of Paper	Hours	Credits
V	IV	20GE5NC01	NCC - National Integration and Personality Development	2	2
VI	IV	20GE6NC02	NCC- Organization and Health Programme in NCC	2	2

INTERNAL COMPONENTS

Internal - I	:	30 marks
Internal - II	:	30 marks
Component - I	:	10 marks
Component - II	:	10 marks
Component - III	:	10 marks
Component - IV	:	10 marks
Total	:	100 marks

NATIONAL INTEGRATION AND PERSONALITY DEVELOPMENT

Semester: V

Hours: 2

Code : 20GE5NC01

Credits: 2

UNIT I: NATIONAL INTEGRATION

Motto of National Integration - Importance of National Integration Culture and heritage of Tamil Nadu. **(6 Hours)**

UNIT II: CIVIL AFFAIRS

Aim of aid to civil authority - Role of NCC Cadets during natural calamities - Types of disaster - Essential services during natural calamities **(6 Hours)**

UNIT III: CIVIL DEFENCE AND SELF DEFENCE

Civil Defence - Organization - Aims and services - Aid to Civil authorities in emergency - Self Defence -Aims of Self Defence - Women and Self Defence **(6 Hours)**

UNI IV: LEADERSHIP AND PERSONALITY DEVELOPMENT

Leadership - Types and traits - Man Management in NCC - Duties of a Good Citizen - Role of Youth in Nation Building - Morale - Factors which affect morale - Factors which develop high morale Personality Development - Factor influencing Personality-Time Management . **(6 Hours)**

UNIT V: SOFT SKILLS

Soft skills - interview skill - influencing skill - social skill - communication skill - self motivation - self esteem - body language. **(6 Hours)**

BOOK FOR REFERENCE:

Mishra R.C., **A Handbook of NCC**, Kanti Prakashan, Etawah, 2000.

ORGANIZATION AND HEALTH PROGRAMME IN NCC

Semester: VI

Hours: 2

Code : 20GE6NC02

Credits: 2

UNIT I: INDIAN MILITARY AND NCC ORGANIZATION

History of Indian Military - Paramilitary forces - BSF- CRPF and CISF - NCC Organization and History - Aims and Objectives of NCC - Motto of NCC - DG's Four Cardinal Principles of NCC - NCC Song- Ranks in Army, Air force and Navy - Certificate Examination in NCC- Honours and Awards. **(6 Hours)**

UNIT II: MAP READING

Map and its features - kinds of north - Service protractor and Compass-bearing - Conversion of bearings - Conventional signs - Setting of map - Finding own position - Map to ground - Ground to map - Night March chart. **(6 Hours)**

UNIT III: HYGIENE AND SANITATION

Personal Hygiene - Sanitation - Methods of purification of drinking water -Latrine types - Urinal Types. **(6 Hours)**

UNIT IV: TYPES OF DISEASE AND POLLUTION

Define Health - Types of Health - Communicable and Non communicable Disease - Pollution and its type. **(6 Hours)**

UNIT V: FIRST AID

Aims of First Aid - Principle of First Aid - Motto of First Aid - List of items in First aid Box - Types of Bandages - Types of Fracture - Dislocation - Types of Wounds - Burns and Scalds - Sprain - Strain - Asphyxia - Drowning - Poison - Shock - Snake bite - Sun and Heat Stroke - Insect bite - Dog bite - Hanging - Artificial Respiration - Haemorrhage. **(6 Hours)**

BOOK FOR REFERENCE:

Mishra R.C., **A Handbook of NCC**, Kanti Prakashan, Etawah, 2000.

INTERNAL QUESTION PATTERN

Time: 2 hours

Marks: 30

PART - A

Answer Any 4 out of five

$4 \times 2 = 8$

PART- B

Two either or questions (one from each)

$2 \times 4 = 8$

PART - C

Two either or questions (one from each)

$2 \times 7 = 14$

DEPARTMENT OF PHYSICAL EDUCATION

COURSE PATTERN

(PART V)

Sem.	Code	Title of the Paper	Hours	Credits
I & II	20STPPE01	Yoga and Rhythmic Activities	120	-
III & IV		Fundamentals of Physical Education	120	1
		Total	240	1

YOGA AND RHYTHMIC ACTIVITIES

Semester: I & II

Hours: 120

Code : 20STPPE01

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	COGNITIVE LEVEL
1.	Recall the principle of Asnas	K
2.	Classify Pranayama for different needs	C
3.	Appraise the application and effects of Suryanamaskar for human wellness	An
4.	Execute the techniques in Free Hand Exercise	Ap
5.	Construct Pyramids based on the underlying principles	S

UNIT I: ASNAS

Sitting Postures - Standing Posture - Prone Posture - Supine Postures.

(24 hours)

UNIT II: PRANAYAMA

Pranayama - Suga Pranayama - Chandra bethana - Nadi Sudhi - Ujjayee - Seethali - Seethakari - Brahmari.

(24 hours)

UNIT III: SURYANAMASKAR

Suryanamaskar: 12 Postures - 12 Postures & Breathe consioius - 12 Postures With manthra - Relaxation Techniques.

(24 hours)

UNIT IV: CALLISTHENICS (FREE HAND EXERCISE)

Standing series - Bending series - Sitting series - Twisting series - Dumb - bells - Indian Clubs - Lezium - Hoops.

(24 hours)

UNIT V: AEROBICS & PYRAMIDS

Aerobics: Aerobic Basics - Aerobic Movements - Aerobic With Rhythm - Aerobic Programme Pyramids: Basics of Pyramids - Types of Pyramids.

(24 hours)

BOOKS FOR REFERENCE:

1. Wuest Jeborah,A and Charles A. Bucher (1987), 'Foundation of Physical Education, B.I Publication Pvt.Ltd., New Delhi.
2. Elangovan.R, (2002), 'Utarkalvi Oru Arimugam', Ashwin Publication, Triunelveli.
3. Chandrasekaran.K, (1999), 'Sound Health through Yoga, Prem Kalyan Publication, Sedapatti.
4. Iyengar, B.K.S,'Lights on Yoga', Unwin Hyman Company, London

FUNDAMENTALS OF PHYSICAL EDUCATION

Semester: III & IV

Hours: 120

Code : 20STPPE01

Credits: 1

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	COGNITIVE LEVEL
1.	Familiarize the fundamentals of Physical Education	K
2.	Illustrate different rules for different games and athletic events	C
3.	Examines the need for good nutrition	Ap
4.	Synthesis the relation between hygiene and health	S
5.	Apply the first aid techniques	Ap

UNIT I: PHYSICAL EDUCATION

Definition, need, scope, aims and objectives of physical education. **(24 hours)**

UNIT II: GAMES AND ATHLETEIC EVENTS

History of Games: Basketball, Volley Ball, Kho-Kho, Kabaddi, Badminton and Ball
Badminton - Rules and regulation of the Games and Athletic Events. **(24 hours)**

UNIT III: NUTRITION

Balanced Diet, Daily Energy Requirement, Nutrient Balance, Nutrition Intake, Diet
and Competition, Nutritional Tips, Your Ideal Weight. **(24 hours)**

UNIT IV: HEALTH EDUCATION

Meaning of health education, Definition of health education, Personal Hygiene,
Communicable Diseases **(24 hours)**

UNIT V: FIRST AID

First Aid: Injuries to bones and Muscles, Sprain, Strain, Muscle Cramp and joints
Dislocation and Fractures Snake-bite, Dog bite Poisoning, Artificial Respiration,
(Drowning) **(24 hours)**

BOOKS FOR REFERENCE:

1. Sathyanesan, R.C., 'Hand Broken Physical Education, 'Gheena Publishers, Madurai.
2. Thirunarayanan,C and Hariharan,s, 'Analytical History of physical Education 'South India Press, Karaikudi.
3. St. John Ambulance Association, 'First Aid to the Injured' New Delhi.
4. Prabhakar Eric, (1995), 'The way to Atheletic Gold', Affiliated East West Pvt. Ltd., New Delhi.

SCHEME OF EVALUATION

1.	Summative Examination (2 hours)	:	40 marks
2.	Continuous Internal Assessment	:	60 marks
	Total	:	100 marks

SCHEME OF EVALUATION FOR CONTINUOUS INTERNAL ASSESSMENT

1.	Attendance (240 hrs)				
	❖ Theory Class	:	120 hrs		
	❖ Games	:	60 hrs	:	20 marks
	❖ Field Work	:	60 hrs		
2.	Performance in any one Game	:			10 marks
3.	Performance in any one of Athletic event	:			10 marks
4.	Performance in Yoga / Rhythmic activities	:			10 marks
5.	Assignment	:			10 marks
	Total	:			60 marks

QUESTION PATTERN FOR SUMMATIVE EXAMINATION

Total marks: 40

Time: 2 hours

SECTION - A

Answer All Questions (5x1=5)
(Choose the best Answer)

SECTION - B

Answer any four questions (4x2=8)
(Four question out of six)

SECTION - C

Answer any Four out of Six questions (4x5=20)
(Four question out of six)

SECTION - D

Answer any one question (1x7=7)
(One question out of two)

CERTIFICATE COURSE ON GANDHIAN THOUGHT

PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO
1.	Think critically, evaluate analytically and apply the acquired knowledge of their discipline in related scenario.
2.	Formulate hypothesis, design experiments, use appropriate tools and interpret the results.
3.	Demonstrate the precise understanding of the principles and theories of their discipline through experiments.
4.	Enhance the communicative skills and gain confidence to disseminate knowledge through oral/verbal communications effectively at various situations.
5.	Identify the different roles in an organizational structure of the work place and carry out multiple roles in social responsibilities.
6.	Increase self-awareness, set and pursue meaningful goals, and develop positive personal qualities such as self-esteem, positive attitude, self-discipline and self-motivation.

PROGRAMME SPECIFIC OUTCOMES

PSO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PO MAPPED
PSO - 1	Analyse the social, political, economic, cultural and religious conditions of the various dynasties of India, British India, Indian Constitution, Indian Administration and Indian Economy to acquire the special skill in the field of administration.	PO- 1, PO-2, PO-4
PSO - 2	Evaluate the History of World Civilizations and Europe in the world politics and compare the various types of constitution and the constitutional development in England.	PO- 1, PO-2
PSO - 3	Get knowledge on the principles of Economics, functions of banking system, development of Science and Technology, Tourism, the importance of Human Rights and equip with computer knowledge and applications for all competitive examinations.	PO- 1, PO-4, PO-5
PSO - 4	Recognize the sacrifice of the freedom fighters in the National Movement and picturize the traditional values in the right perception on Women Studies and Women Entrepreneurship.	PO- 1, PO- 5, PO- 6
PSO - 5	Participate in discussions by listening to others perspectives, asking productive questions, articulating original ideas, correspond efficiently with good vocabulary, realize the need of historical research and excel in General Studies for Competitive Examinations.	PO- 2, PO- 5, PO- 6

PAPER I: LIFE OF MAHATMA GANDHI - CCHYGT01

Code: CCHYGT01

Hours: 1

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on the Early Life of Mahatma Gandhi	PSO - 5	K
CO-2	Analyse the racial equality and Mahatma Gandhi's Experience in South Africa	PSO - 5	An
CO-3	Explain the role of Mahatma Gandhi in Indian Freedom Struggle	PSO - 2	Ap
CO-4	Assess the constructive works of Mahatma Gandhi in Indian Nationalism	PSO - 2	Ap
CO-5	Discuss the major Incidents from the Life of Mahatma Gandhi	PSO - 5	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

		PAPER I: LIFE OF MAHATMA GANDHI - CCHYGT01										Hours: 1
Code: CCHYGT01		CCHYGT01										Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												4.45

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

UNIT I

Family background and beginnings of the Mahatma - Birth and childhood - Education and family life - lessons learned - The London Experience

UNIT II

Making of the Mahatma: Gandhi in South Africa - From a barrister to a people's leader - Towards racial equality - From family life to ashram life - Birth of Satyagraha and constructive work - experiments with truth

UNIT III

Beginnings of Indian Freedom Struggle: Early resistances and 1857 Revolt - Birth of Indian National Congress: Moderates, Extremists and Terrorists - Gandhi leads the nation in a new direction - Early micro satyagrahas

UNIT IV

Mahatma Gandhi leads the Freedom struggle to victory: Major satyagrahas - Constructive Work - Sabarmathi and Sevagram - Various currents of Indian Nationalism - Towards partition and freedom - The final martyrdom

UNIT V

Video shows on Gandhi - Field and life experiences - Incidents from the life of Gandhi that inspired and shaped your life.

PAPER II: NON VIOLENCE AND SARVODAYA - CCHYGT02

Code: CCHYGT02

Hours: 1

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on Mahatma Gandhi's Non - violence	PSO - 5	As
CO-2	Discuss the Policies of Mahatma Gandhi on Truth and Action	PSO - 5	An
CO-3	Analyse Sarvodaya and Antyodaya	PSO - 5	K
CO-4	Assess the values introduced through Brahmacharya and Aparigraha	PSO - 5	Ap
CO-5	Relate violence and Truth in our day today life with the teachings of Gandhiji	PSO - 2	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Code: CCHYGT02		PAPER II: NON VIOLENCE AND SARVODAYA - CCHYGT02										Hours: 1
												Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												4.45

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos= $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	---

UNIT I

Meaning of Nonviolence (*ahimsa*): Nonkilling and noninjuring - Love, service and forgiving - Nonviolent Action: Peaceful resolution of conflict, nonviolent life style & constructive work and Satyagraha - Nonviolent values and ethics

UNIT II

Truth: Absolute and Relative - Moving beyond falsehood, errors and mistakes - Truth and pluralism - Truth and action - Truth and Nonviolence

UNIT III

Sarvodaya (welfare of all at all levels) and Antyodaya (welfare of the last first) - Means and Ends - Removal of untouchability - Communal Harmony - Uplift of Women

UNIT IV

Removal of poverty: Full & total appropriate employment - Self-dependence, Self-reliance, Swaraj and Swadeshi (love thy neighbour) - Self-control and Sublimation (*brahmacharya*) - Simple and Ethical living - *Aparigraha* (nonpossession) and Trusteeship (stewardship) - Appropriate and Holistic Science and Technology.

UNIT V

Place of Nonviolence and truth in our day to-day life and ways to enhance them - learn and practice three skills which would enhance your self-reliance and ability to help (serve) others in need - Resolve conflicts peacefully - Experience inter-religious relationships, dialogue and prayers.

RECOMMENDED BOOKS

PAPER I

Mahatma Gandhi	:	An Autobiography சத்திய சோதனை
R. Nanda	:	Mahatma Gandhi - A Biography
டி.டி. திருமலை	:	காந்தி
கல்கி	:	மாந்தருள் ஒரு தெய்வம்
திரு.வி.க.	:	காந்தியடிகளும் மனித வாழ்க்கையும்
ஜெயகாந்தன்	:	வாழ்விக்க வந்த காந்தி
J.B. Kriplani	:	Gandhi His Life and Thought
லூயி பிஷர்	:	மகாத்மா காந்தி
Louis Fischer	:	The Life of Mahatma Gandhi
பா. ஆனந்தி, மங்களவதி கேப்ரியல் &	:	காந்திய சிந்தனை வினா-விடை
வி.ஏ. வித்யா	:	(Gandhian Thought Quiz)
சி. பெரிதாய் & பா. ஆனந்தி	:	மகாத்மா காந்தியடிகளின் காலம்

PAPER II

M.K. Gandhi	:	Sarvodaya
_____	:	Nonviolence in Peace and War (2 Vols)
_____	:	Truth is God
Richard B. Gregg	:	Power of Nonviolence
மு. வசந்தா (பதி.)	:	சர்வோதயம்
R.R. Diwakar	:	The Saga of Satyagraha
ச. செயப்பிரகாசம்	:	அகிம்சை

COURSE BOOK:

மகாத்மா காந்தியின் வாழ்வும் அறவியலும் - டாக்டர் பா. ஆனந்தி & டாக்டர் ச. செயப்பிரகாசம்
Life and Values of Mahatma Gandhi - Dr. B. Ananthi & Dr. S. Jeyapragasam

தாள் I - மகாத்மா காந்தியின் வாழ்வு - CCHYGT01

Code: CCHYGT01

Hours: 1

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on the Early Life of Mahatma Gandhi	PSO - 5	K
CO-2	Analyse the racial equality and Mahatma Gandhi's Experience in South Africa	PSO - 5	An
CO-3	Explain the role of Mahatma Gandhi in Indian Freedom Struggle	PSO - 2	Ap
CO-4	Assess the constructive works of Mahatma Gandhi in Indian Nationalism	PSO - 2	Ap
CO-5	Discuss the major Incidents from the Life of Mahatma Gandhi	PSO - 5	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Code: CCHYGT01		தாள் I - மகாத்மா காந்தியின் வாழ்வு - CCHYGT01										Hours: 1
												Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												4.45

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	--

அலகு 1

குடும்ப பின்னணியும் மகாத்மாவின் தொடக்கமும் - பிறப்பும் குழந்தைப் பருவமும் - கல்வியும் குடும்ப வாழ்வும் - கற்ற பாடங்கள் - இலண்டன் அனுபவங்கள்.

அலகு 2

மகாத்மா உருவாகிறார் - தென்னாப்பிரிக்காவில் காந்தி - பாரிஸ்டரிலிருந்து மக்கள் தலைவராக - இன சமத்துவத்தை நோக்கி - குடும்ப வாழ்விலிருந்து ஆசிரம வாழ்வுக்கு - சத்தியாகிரகம் மற்றும் தீர்மானப்பணியின் தொடக்கம் - சத்திய பரிசோதனைகள்.

அலகு 3

இந்திய விடுதலைப் போராட்டத்தின் தொடக்கம் - ஆரம்ப கால எதிர்ப்புகளும் 1857 எழுச்சியும் - இந்திய தேசிய காங்கிரஸின் தொடக்கம் - மிதவாதிகள், தீவிரவாதிகள் மற்றும் பயங்கரவாதிகள் - காந்தி நாட்டை புதிய திசையில் நடத்துகிறார் - ஆரம்ப வட்டார சத்தியாகிரங்கள்.

அலகு 4

மகாத்மா காந்தி இந்திய விடுதலைப் போராட்டத்தை தலைமையேற்று நடத்துகிறார் - தேசிய சத்தியாகிரங்கள் - நிர்மாணப் பணிகள் - சபர்மதியும் சேவாகிராமும் - இந்திய தேசியத்தின் பல்வேறு போக்குகள் - பிரிவினையும் விடுதலையும் - மகத்தான உயிர் தியாகம்.

அலகு 5

காந்தியைப் பற்றிய படங்கள் - கள மற்றும் வாழ்க்கை அனுபவங்கள் - உங்களது வாழ்வை பரவசப்படுத்திய, உருக்கிய மகாத்மா காந்தியின் வாழ்க்கை நிகழ்ச்சிகள்.

தாள் II - அகிம்சையும் சர்வோதயமும் - CCHYGT02

Code: CCHYGT02

Hours: 1

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on Mahatma Gandhi's Non - violence	PSO - 5	As
CO-2	Discuss the Policies of Mahatma Gandhi on Truth and Action	PSO - 5	An
CO-3	Analyse Sarvodaya and Antyodaya	PSO - 5	K
CO-4	Assess the values introduced through Brahmacharya and Aparigraha	PSO - 5	Ap
CO-5	Relate violence and Truth in our day today life with the teachings of Gandhiji	PSO - 2	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Code: CCHYGT02		தாள் II - அகிம்சையும் சர்வோதயமும் - CCHYGT02										Hours: 1
												Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												4.45

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos= $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
--	---

அலகு 1

அகிம்சையின் பொருள் - கொல்லாமையும் துன்பம் செய்யாமையும் - அன்பு, தொண்டு மற்றும் மன்னித்தல் - அகிம்சைச் செயல்- அமைதி வழியில் சிக்கல் தீர்வு, அகிம்சை வாழ்வியலும் நிர்மாணப்பணியும், சத்தியாகிரகம் - அகிம்சை அறவியலும் விழுமியங்களும்.

அலகு 2

உண்மை : பேருண்மையும் (முழுமை உண்மையும்) சார்பு உண்மையும்- பொய்மைகள், தவறுகள் மற்றும் குற்றங்களுக்கு அப்பால் செல்லுதல் - உண்மையும் பன்மியமம் - உண்மையும் செயலும் - உண்மையும் அகிம்சையும்.

அலகு 3

சர்வோதயமும் (அனைவரின் நலம் அனைத்து நிலைகளிலும்) அந்தியோதயமும் (கடையவர் நலன் முதலில்) - குறிக்கோளும் வழிமுறையும் - தீண்டாமை நீக்கம் - சமூக ஒற்றுமை - மகளிர் முன்னேற்றம்.

அலகு 4

வறுமை நீக்கம் : முழுமையான ஏற்புடைய வேலை வாய்ப்பு - தற்சார்பும் தன்னிறைவும், சுயராஜ்ஜியம் மற்றும் சுதேசி (அயலவரை நேசி) - புலனடக்கமும் மேன்மையாக்கமும் (பிரம்மச்சரியம்) - எளிய மற்றும் அறவியல் வாழ்வு உடைமையின்மையும், அறங்காவலர் நெறியும் - ஏற்புடைய மற்றும் முழுமை அறிவியலும் தொழில் நுட்பமும்.

அலகு 5

நமது அன்றாட வாழ்வில் அகிம்சையும் உண்மையும் பெறுமிடமும் அதனை மேம்படுத்தும் வழிகளும் - உங்களது தற்சார்பையும் தேவையில் பிறருக்கு உதவும் ஆற்றலையும் வளர்க்கும் ஏதாவது மூன்று திறன்களைக் (Skills) கற்றல் - அமைதி வழியில் சிக்கல் தீர்வு அனுபவங்கள் - சர்வசமய நட்புறவு, உரையாடல் மற்றும் வழிபாட்டு அனுபவம் பெறல்.

DEPARTMENT OF HINDI
PART I - HINDI - COURSE PATTERN

Part	Sem.	Code	Title of the Paper	Hours	Credits
I	I	20GH1GS01	Paper - I - Prose, Short Story and Grammar- I	5	3
	II	20GH2GS02	Paper - II - Novel, One act Play, and Grammar - II	5	3
	III	20GH3GS03	Paper - III Poetry and History of Hindi Literature, Alankar	5	3
	IV	20GH4GS04	Paper IV - General Essay, Technical Hindi, Translation, and Letter Writing	5	3
		Total		20	12

TESTING AND EVALUATION

Course	Continuous Internal Assessment	Semester Examination
Hindi	40%	60%

Continuous Internal Assessment

Continuous Assessment will be carried out by the Course Teachers. The components of CIA are as follows:

Components	Marks
Test -I	30
Test -II	30
Seminar/Quiz	10
Assignment	05
Attendance	05
Total	*80

* The total internal marks obtained for 80 will be converted into marks obtained for 40.

HINDI - EXTERNAL QUESTION PATTERN

Time: 3 Hours

Marks: 60

Section A: (One Word / Sentence)

10 x 1 = 10 Marks

Section B: (Paragraph / Annotation)

4 x 5 = 20 Marks

Section C: (Essay)

3x 10 = 30 Marks

PAPER I - PROSE, SHORT STORY AND GRAMMAR - I

Semester: I

Hours: 5

Code : 20GH1GS01

Credits: 3

1. Prose : Naveen Hindi Patamala Part-3

Published by Dakshina Bharathi Hindi Prachar Sabha,
Thyagaraya Nagar, Chennai - 600 017.

The following Lessons have been prescribed

- a) Shiraj Ki Gurubhakthi
- b) Shri Krishn
- c) Gupth Rupya
- d) Karmaveer Kamaraj

2. Short Story : Kahani Manjari

Edited by : Dakshin Bharath Hindi Prachar Sabha,
Thyagaraya Nagar, Chennai - 600 017.

The following short stories have been prescribed

- a) Badegar kee beti - Premchand
- b) Thayee - Vishwamranava
Shrama Kaushik
- c) Paanch minute - Mohanlalji Mahato yogi
- d) Usne Kaha tha - Chandra dharshama
Guleri

3. Grammar I : Vyakaran Pradeep Published by Ramdev, Hindi Bhaan,
63, Tagore Nagarm Allahabad -2

The following topics have been prescribed

- a) Noun b) Gender and Number
- c) Pronoun d) Adjectives

PAPER II - NOVEL, ONE ACT PLAY AND GRAMMAR - II

Semester: II

Hours: 5

Code : 20GH2GS02

Credits: 3

- 1. Novel** : Nirmala (Abridged version)
by Premchand, Hamsa Prakashan Allahabad
- 2. One Act Play** : Aadarsh Ekanki
Published by Dakshina Bharath Hindi Prachar
Sabha,
Thyagaraya Nagar, Chennai - 600 017.
The following Ekankies have been prescribed
- a) Doosra din - Kanchanlatha sabbarval
 - b) Rajpoothri Ka badla - Divjendralal Rai
- 3. Grammar** : Ramdev, Published by Hindi Bhavan,
63 Tagore Nagar, Allahabad - 2
The following topics have been prescribed
- a) Verb
 - b) Tense and Voice
 - c) Adverb
 - d) Prepositions
 - e) Conjunctions
 - f) Interjunctions

PAPER III - POETRY AND HISTORY OF HINDI LITERATURE, ALANKAR

Semester: III

Hours: 5

Code : 20GH3GS03

Credits: 3

1. POETRY:

Kavya Saurab Published by Dakshina Bharatha Hindi Prachar Sabha, T. Nagar, Chennai - 600 017.

The following poems have been prescribed

1. Sachche Devtha - Ayodhya Singh Upadhyay Harioudh
2. Murjhaphool
3. Vivshtha
4. Badal - Sumitranandan Panth
5. Vasanth Aayaa
6. Deep Koi jal raha hai
7. Kabir Ke Dohe - 5 numbers
8. Tulasi Ke Dohe - 5 numbers
9. Raheem Ke Dohe - 5 numbers
10. Bihari Ke Dohe - 5 numbers

2. HISTORY OF HINDI LITERATURE:

Hindi Sahitya Ka Itihas by Rajanath Sharma Vinod Pushhak Mandir, Agra - 2

The following topics have been prescribed Salient features of Aadikl Bakthikal (Gyan marg, Premmag, Rambakthi, Krishnabakthi and Reethika.

Short Notes from Adunikkal: Chayavad, Pragathivad, Mythili Sharan, Gupta, Dinkar Premchand Pant Prasad, Ramachandra Shukla

3. ALANKAR:

Ras chand Alankar Chandrika Karnataka Mahila Hindi Seva Samithi, Chamarajpet, Bangalore - 560 008. The following Alankars have been prescribed Anupras, Yamak, Vakrokthi, Upama, Virodabhas.

**PAPER - IV - GENERAL ESSAY, TECHNICAL HINDI, TRANSLATION AND
LETTER WRITING**

Semester: IV

Hours: 5

Code : 20GH4GS04

Credits: 3

1. General Essay:

Nibandh Praveshika, Dakshin Bharath Hindi Prachar Sabha T.Nagar, Chennai - 600 017

The following Sahityotar (General) essay have been prescribed

- a. Anushashan
- b. Parishram Ka Mahatva
- c. Paropkar
- d. Bharat Ki Kalatmak Ekta
- e. Nari Ka Karthavye Aur Adhikaar

2. Translation: Anuvad Aabyas - III (1-5 Lessons) English to Hindi, Hindi to English Published by Dakshina Bharath Hindi Prachar Sabha T.Nagar, Chennai - 600 017.

3. Technical Hindi: Karyalaya Sahayika, Kendriya Sachivalaya Hindi Parishad NewDelhi, Hindi Vathayan Dr. K. Chandra Mohan, Viswa Vidyalaya Prakashan Varanashi

Banking Terms : 50 only

Nemikaryalaya Tippani : 50 only

Name of the Ministries : 33 only

4. Letter Writing: Pramanik Alekan Aur Tippan Prof Viraj M.A. Kashmirmgate, Delhi - 110 006
PaariVarik Patra, Avedan Patra, Sampathak ke naam Patra, Padhadhikariyon ke naam Patra