

FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF ZOOLOGY
COURSE CURRICULUM

PART- A: Introduction				
Program: Bachelor in Life Science (Degree / Honors)		Semester - VI		Session: 2024-2025
1	Course Code	ZOSC-06T		
2	Course Title	Genetics		
3	Course Type	Discipline Specific Course		
4	Pre-requisite (if, any)	As per Program		
5	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: ➤ Understand and grasp the principles of Mendelian inheritance and interaction of genes. ➤ Understand the sources and consequences of genetic variation, including mutations, genetic recombination, and gene flow. ➤ Know various methods of sex determination in animal kingdom. ➤ Analyse the cause and effect of alterations in chromosome number and structure ➤ Understand DNA structure and function, gene expression, and genetic inheritance patterns ➤ Know the Recent Assisted Reproductive Techniques		
6	Credit Value	3 Credits	Credit = 15 Hours - learning & Observation	
7	Total Marks	Max. Marks: 100	Min Passing Marks: 40	
PART -B: Content of the Course				
Total No. of Teaching-learning Periods (01 Hr. per period) - 45 Periods (45 Hours)				
Unit	Topics (Course contents)			No. of Period
I	Concept of Genes and Genomics: Scope and importance. Elements of heredity and variation: Classical and Modern concept of Gene (Cistron, Muton, Recon), Alleles. Mendel's laws of inheritance, Chromosomal basis of inheritance and its applications. Exceptions to Mendelian Inheritance: Incomplete dominance, Codominance, Multiple allelism. Interaction of Gene- Lethal alleles, Pleiotropy, Epistasis- Dominant and Recessive, Supplementary, Complementary, Inhibitory gene and polygene. Define Penetrance, Expressivity and Phenocopy.			12
II	The recombination and interaction of Genes: Linkage and crossing over, cytological basis of crossing over. Organelle inheritance (Mitochondrial), Sex Chromosomes and sexlinked Gene X-linked dominant and X-linked recessive. Sex determination: Theories of sex determination: Chromosomal Theory (XX/XO, XX/XY, ZZ/ZW, ZZ/ZO), Genetic balance theory, intersex, Haplodiploidy, Gynandromorphs. Hormonal influence on sex determination- Freemartin and sex reversal. Role of environmental factors- Bonellia and Crocodile. Eugenics. Mutation, Chromosomal and Gene Mutation, Structural and numerical alterations of chromosomes.			11
III	Regulation of Gene expression, regulation and mapping: Gene Expressions and regulation: One gene-one enzyme hypothesis /one polypeptide hypothesis. Concept of operon of bacteria (Lac Operon) and bacteriophages. Bacterial transposons. Vertical and horizontal gene transfer. Transformation, transfection and transduction. Genetic mapping. RNA-inheritance, FLP-FRT. Utility of the model organisms: Escherichia coli, Drosophila melanogaster & Mus musculus			11
IV	Population Genetics and Genetic Counselling: Human Genetics: Pedigree analysis; Karyotype, Genetic disorders: chromosomal aneuploidy (Down, Edward, Patau, Turner and Klinefelter syndromes), chromosome translocation (Chronic Myeloid Leukemia) and deletion ("cry of cat" syndrome). Single Gene Disorder: gene mutation (sickle cell anemia,) and Genetic counselling, Gene isolation Manipulation and techniques. Basic concept of Polymerase Chain Reaction. DNA Sequencing; Southern, Western & Northern Blots. In situ Hybridization, FISH, RFLPs and Oligonucleotide arrays. Gene Cloning vs Animal Cloning, Nuclear transplantation,			11
Keywords	Genetics, Mendel's law, Interaction of Gene, Sex Linkage, Sex Determination, Operon, Genetic Screening, Pedigree Analysis, Aneuploidy			
Signature of Convener & Members (CBoS) :				

PART-C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –

- Arora M.P. and Sandhu G.S. Genetics, Himalayan Publishing House
- Winter P.C. Et al, Genetics Viva Publication
- Gupta P.K., Cell and Molecular Biology Rastogi Publication

Reference Books Recommended –

- Gardner, E.J. *et al.* (2006) Principles of Genetics (John Wiley).
- Russell, P.J. (2010) Genetics (Benjamin Cummings).
- Gardner, E.J., Simmons, M.J., Snustad, D.P. (2008). Principles of Genetics. (VIII edition) Wiley India.
- Snustad, D.P. and Simmons, M.J. (2009). Principles of Genetics. (V edition) John Wiley and Sons Inc.
- Klug, W.S., Cummings, M.R. and Spencer, C.A. (2012). Concepts of Genetics. (X edition) Benjamin Cummings.
- Carroll S.B.; Doebley J.; Griffiths, A.J.F. and Wessler, S.R. (2018) An Introduction to Genetic Analysis. W. H. Freeman and Co. Ltd.
- Campbell, N. and Reece, J. (2014) Biology (10th edition). Benjamin Cummings

Online Resources–

- National digital Library.
- <http://ndl.iitkgp.ac.in/document/Rm5qb3lqRngwWDZ2Tnl6UXl4VU9YR201R0cwYXJHV25HSHFacGxtSlh3REZGd1ByL28xcmlleEFFZU5najlCZl1HdXBBTzBlTBVVRGIDSFhkMETuUkE9PQ>
- E-PG Pathshala.
- <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=2rAslPuvga4LW93zMe83aA>
- eGyankosh- Genetics and Evolutionary Biology
- eGyanKosh: BZYCT-137 Genetics and Evolutionary Biology

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 100 Marks

Continuous Internal Assessment (CIA): 30 Marks

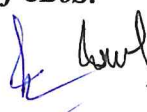
End Semester Exam (ESE): 70 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 20 +20	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 30 Marks
	Assignment / Seminar - 10 Total Marks - 30	
End Semester Exam (ESE):	Two section – A & B Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20 Marks Section B: Descriptive answer type qts., 1out of 2 from each unit-4x10=40 Marks	

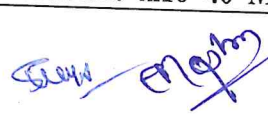
Name and Signature of Convener & Members of CBoS:











FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF ZOOLOGY
COURSE CURRICULUM

PART- A: Introduction			
Program: Bachelor in Life Science (Degree / Honors)		Semester - VI	Session: 2024-2025
1	Course Code	ZOSC- 06P	
2	Course Title	Genetics	
3	Course Type	Discipline Specific Lab Course	
4	Pre-requisite (if, any)	<i>As per Program</i>	
5	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to- ➤ Able to understand and explain Mendel's Law of Inheritance ➤ Capable to analyze inheritance of gene by pedigree analysis. ➤ Know laboratory culture of <i>Drosophila</i>. ➤ Understand and configuration for animal life. ➤ Capable to understand Human karyotype and Numerical alteration in chromosomes	
6	Credit Value	1 Credits	<i>Credit =30 Hours Laboratory or Field learning/Training</i>
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20
PART -B: Content of the Course			
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)			
Module	Topics (Course contents)		No. of Period
Lab./Field Training/ Experiment Contents of Course	➤ Application of probability in the law of segregation with coin tossing. ➤ Study of mode of inheritance of the following traits by pedigree charts – attached ear lobe, widow's peak. ➤ Familiarization with techniques of handling <i>Drosophila</i>, identifying males and females; observing wild type and mutant (white eye, wing less) flies, and setting up cultures. ➤ Study of human karyotypes and numerical alterations (Down syndrome, Klinefelter syndrome and Turner syndrome). ➤ Demonstration of law of segregation (monohybrid and test cross) sex-linked inheritance in <i>Drosophila</i> making a cross between white eye dumpy winged or sepia eyed and wild type flies (criss-cross inheritance) Explain with Model ➤ Study of structural chromosome aberrations (dicentric, ring chromosomes and inversions in polytene chromosomes) from prepared slides/photograph ➤ Extraction of Genomic DNA from bacteria. ➤ Group discussion/ Seminar/ Quiz presentation on one or two related topics		30
Keywords	<i>Mendel's Law, Human Karyotype, Drosophila Culture, Pedigree</i>		
Signature of Convener & Members (CBoS) :			

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PART-C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –

- Practical Hand Book of Genetics: Vikas Pali Kalyani Publication
- Essential Practical Handbook of Cell Biology & Genetics, Biometry & Microbiology, A Laboratory Manual Debarati Das, Academic Publishers.
- Cytogenetics: Mohan P Arora, Himalayan Publishing House

Reference Books Recommended –

- Klug, W.S., Cummings, M.R. and Spencer, C.A. (2012). Concepts of Genetics. (X edition) Benjamin Cummings.
- Carroll S.B.; Doebley J.; Griffiths, A.J.F. and Wessler, S.R. (2018) An Introduction to Genetic Analysis. W. H. Freeman and Co. Ltd.

Online Resources–

- <https://jru.edu.in/studentcorner/lab-manual/agriculture/Fundamentals%20of%20Genetics.pdf>

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

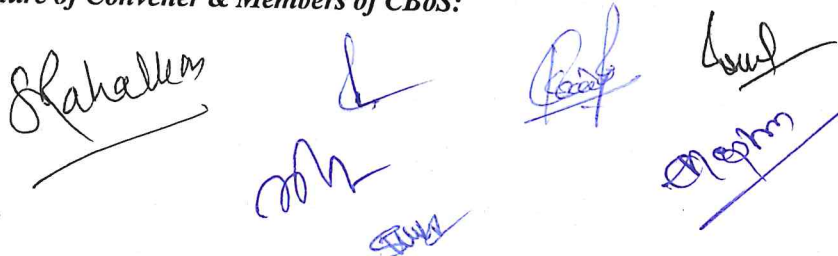
Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

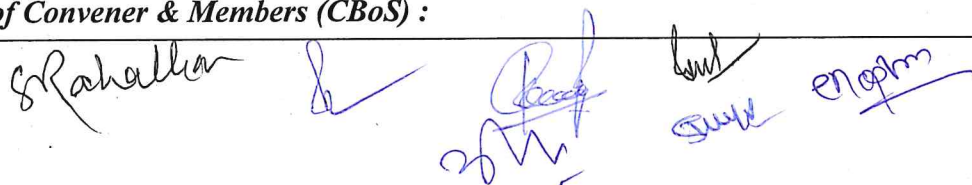
Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 10 & 10	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
	Assignment/Seminar +Attendance - 05 Total Marks - 15	
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment	
	A. Performed the Task based on lab. work - 20 Marks B. Spotting based on tools & technology (written) – 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Course teacher as per lab. status

Name and Signature of Convener & Members of CBoS:



FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF ZOOLOGY
COURSE CURRICULUM

PART- A: Introduction			
Program: Bachelor in Life Science (Degree/Honors)		Semester - VI	Session: 2024-2025
1	Course Code	ZOSE-04T	
2	Course Title	Evolutionary Biology	
3	Course Type	Discipline Specific Elective	
4	Pre-requisite (if, any)	As per Program	
5	Course Learning Outcomes (CLO)	After successfully completing this course the students will be able to- ➤ Understanding the historical concept of Evolution. ➤ Develop an understanding on the Evolutionary Concept and theories in evolution. ➤ Understanding on the different interacting evolutionary process by various examples. ➤ Learn animal phylogeny and adaptations. ➤ Develop an interest in the debates and discussion taking place in the field of evolutionary biology.	
6	Credit Value	3 Credits	Credit = 15 Hours - learning & Observation
7	Total Marks	Max. Marks: 100	Min Passing Marks: 40
PART -B: Content of the Course			
Total No. of Teaching-learning Periods (01 Hr. per period) - 45 Periods (45 Hours)			
Unit	Topics (Course contents)		No. of Period
I	Historical review of evolutionary concept: Evidences in favor of Evolution: Evidences from morphology and comparative anatomy (Homology, Analogy and Vestigial organs), Evidences from Paleontology, Connecting Links, Embryology, Taxonomy, Cytology, Biochemistry & physiology and from Genetics. Theories of Evolution: Lamarckism, Neo-Lamarckism and Darwinism (Basic Postulates of Darwinism, Supplementary theories of Darwin, Support & Criticism of Darwinism) Modern Synthetic theory of Evolution: Gene and Chromosomal Mutation.		12
II	Evolutionary forces: Natural Selection, Genetic variation, Genetic drift (mechanism, founder's effect, bottleneck phenomenon), Gene Migration. Hardy-Weinberg Law, Molecular clock (example of globin gene family) rRNA/cyt c). Isolation: Pattern & mechanism of isolation.		11
III	Products of evolution: speciation mechanisms: Quantitative traits, Species Concept: Morphological, Biological, Genetical and phylogenetic species concept. Species Categories: Geographical races, Demes, Clines, Ecological races, Semi species, Speciation: Phyletic speciation, Gradual speciation: Allopatric, sympatric, peripatric, parapatric, Alloparapatric. Theories of speciation: Classical theory of Gradualism, Founder flush speciation theory. Mimicry: Protective, Aggressive, Batesian & Mullerian mimicry and significance of mimicry, Aposematic coloration, Thanatosis, Extinctions: massextinctions (causes and effects), detailed example of K-T extinction.		11
IV	Basic patterns of Evolution: Micro & Macro Evolution. Phylogenetic Tree: Its construction and Interpretation. Fossils and fossilization, dating and significance of fossil. Geological Time Scale, Evolution of Man and Evolution of Horse.		11
Keywords	Homology, Analogy, Natural Selection, Genetic variation, Genetic drift, Speciation, Mimicry.		
Signature of Convener & Members (CBoS) :			



PART-C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –

- Rastogi, Veerbala, Organic Evolution (2018). Third Revised Edition. MEDTECH.
- Singh, S.P., Tomar, B.S., Evolutionary Biology, Rastogi Publication
- Verma P.S., Agrawal V.K., Cell Biology, Genetics, Evolution & Ecology, S.Chand Publication

Reference Books Recommended –

- Ridley, M. (2004). *Evolution*. III Edition. Blackwell Publishing
- Barton, N. H., Briggs, D. E. G., Eisen, J. A., Goldstein, D. B. and Patel, N. H. (2007). *Evolution*. Cold Spring, Harbour Laboratory Press.
- Hall, B. K. and Hallgrimsson, B. (2008). *Evolution*. IV Edition. Jones and Bartlett Publishers.
- Douglas, J. Futuyma (1997). *Evolutionary Biology*. Sinauer Associates.
- Campbell, N.A. and Reece J.B (2011) Biology (9th edition) Pearson, Benjamin, Cummings
- De Robertis, E.D.P. and De Robertis, E.M.F. (2006) Cell and Molecular Biology (8th edition) Lippincott Williams and Wilkins, Philadelphia.

Online Resources–

- Egyankosh-
- <https://egyankosh.ac.in/bitstream/123456789/16425/1/Unit-10.pdf>
- National Digital Library
- http://ndl.iitkgp.ac.in/he_document/libretexts/libretexts/2f661e95fc3f32dd7204f7188addec22?e=17|EVOLUTION|||
- http://ndl.iitkgp.ac.in/he_document/swayamprabha/swayam_prabha/1o8mxiahue8?e=1*|||

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 100 Marks

Continuous Internal Assessment (CIA): 30 Marks

End Semester Exam (ESE): 70 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 20 +20 Assignment / Seminar - 10 Total Marks - 30	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 30 Marks
End Semester Exam (ESE):	Two section – A & B Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20 Marks Section B: Descriptive answer type qts., 1 out of 2 from each unit-4x10=40 Marks	

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FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
ZOOLOGY
COURSE CURRICULUM

PART- A: Introduction			
Program: Bachelor in Life Science (Degree/Honors)		Semester - VI	Session: 2024-2025
1	Course Code	ZOSE-04P	
2	Course Title	Evolutionary Biology	
3	Course Type	Discipline Specific Elective Lab Course	
4	Pre-requisite (if, any)	As per Program	
5	Course Learning Outcomes (CLO)	After successfully completing lab course the students will be able to- ➤ Understanding on the process evolutionary biology by the study of some animals. ➤ Learn the different interacting evolutionary process by various examples. ➤ Understand evolution through fossils Acquire an in-depth knowledge on the diversity and relationships in animal world through evolutionary process.	
6	Credit Value	1 Credits	Credit =30 Hours Laboratory or Field learning/Training
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20
PART -B: Content of the Course			
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)			
Module	Topics (Course contents)		No. of Period
Lab./Field Training/ Experiment Contents of Course	- Study of homology (forelimbs, heart, brain in vertebrates) through models and charts. - Study of Analogy (wings of insect, birds and bat) through models and charts. - Study of Serial homology in appendages of <i>Palaemon</i>. - Study of Virus, Euglena, Peripatus, Balanoglossus, Chimaera, Lung fish, Archeopteryx, and Echidna on the basis of Evolution (connecting link). - Study of adaptive radiations in vertebrates and mouth parts of insects. - Exercise based on Hardy-Weinberg Law. - Demonstration of role of natural selection and genetic drift in changing allele frequencies using simulation studies. - Construction of phylogenetic trees and its interpretation. - Phylogenetic tree of Man and Horse - Study of fossils from models/pictures - Preparation of Practical Record - Group Discussion/Quiz/Seminar/Project on related topics.		
Keywords	Evolution, Homology, Analogy, Phylogenetic tree, Adaptive radiation		
Signature of Convener & Members (CBoS) :			

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PART-C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –

- Rastogi, Veerbala, Organic Evolution (2018). Third Revised Edition. MEDTECH.
- S.S. Lal, Practical Zoology, Invertebrate. 12th Edition Rastogi Publications, Meerut, New Delhi.
- A manual of practical Zoology. Dr. P.S Verma, S. Chand Publication, New Delhi

Reference Books Recommended –

- Ridley, M. (2004). Evolution. III Edition. Blackwell Publishing
- Barton, N. H., Briggs, D. E. G., Eisen, J. A., Goldstein, D. B. and Patel, N. H. (2007).
- Evolution. Cold Spring, Harbour Laboratory Press.

Online Resources–

National Digital Library

- http://ndl.iitkgp.ac.in/he_document/libretexts/3d7e9973648c332bee5336b05c6cf84f

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

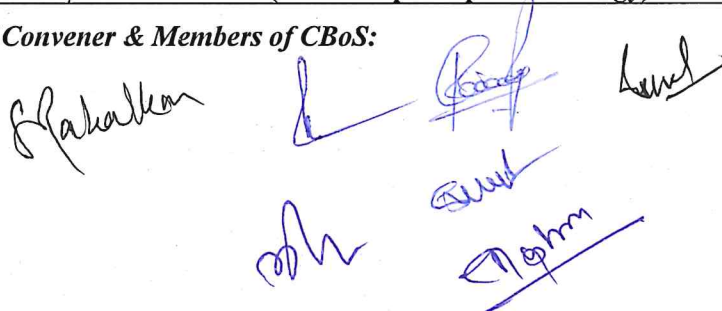
Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

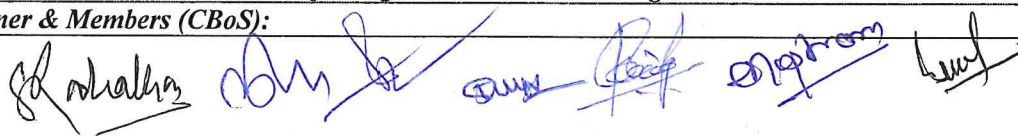
Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar +Attendance - 05 Total Marks - 15	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment A. Performed the Task based on lab. work - 20 Marks B. Spotting based on tools & technology (written) – 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Course teacher as per lab. status

Name and Signature of Convener & Members of CBoS:



FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF ZOOLOGY
COURSE CURRICULUM

PART-A: Introduction			
Program: Bachelor in Life Science (Certificate / Diploma / Degree)		Semester – II/IV/V/VI	Session: 2024-2025
1	Course Code	ZOSEC-01	
2	Course Title	Vermiculture and Vermicomposting	
3	Course Type	Skill Enhancement Course	
4	Pre-requisite (if, any)	As per Program	
5	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: ➤ Learn the identifiable features of earthworm species for vermiculture and vermicomposting. ➤ Cultivate the skills of vermiculture. ➤ Understand the challenges in vermiculture and vermicomposting. ➤ Analyze the features of different vermicomposting methods. ➤ Create entrepreneurial prospects in this field.	
6	Credit Value	2 Credits (1C + 1C)	Credit = 15 Hours –Theoretical learning and = 30 Hours Laboratory or Field learning/Training
7	Total Marks	Max.Marks:50	Min Passing Marks:20
PART -B: Content of the Course			
Total No. of Teaching–learning Periods: Theory–15 Periods (15 Hrs) and Lab. or Field learning/Training 30 Periods (30 Hours)			
Module	Topics (Course contents)		No. of Period
Theory Contents	General Introduction: Distribution and habit, habitat. Food: Phytophagous and Geophagous earthworm. Morphology of earthworm. Ecological categories: Epigeic, Endogeic and Anecic earthworms. Ecological requirements: moisture, temperature, light, pH and, organic matter. Ecosystem services: role played by earthworms in soil ecosystem. Difference between vermiculture and vermicomposting. Role of earthworm and vermicompost in growth of plants. Vermiculture: Definition and features. Selective features of earthworms for vermiculture. Vermiculture methods: Wormery, breeding techniques: indoor and outdoor cultures, monoculture and polyculture, merits and demerits. Obstacles in Vermiculture: Prevention and Management. Vermicomposting: Definition and features. Scientific names and distinguishing features of native and exotic vermicomposting earthworms (Native Indian earthworms. <i>Perionyx excovatus</i> , <i>Perionyx ceylanensis</i> , European earthworms. <i>Eisenia fetida</i> , <i>Eisenia andrei</i> , South African earthworms. <i>Eudriluseugeniae</i>), Principle of vermicomposting, Methods of vermicomposting: Low-cost Floor beds, Grow bags & Tank system. Management during vermicomposting (Physical and Biological). Products of vermicomposting, physiochemical features and their utility: earthworm biomass (vermiprotein), vermicompost and vermiwash. Harvesting the vermicompost & storage. Marketing prospects of Vermicomposting in Chhattisgarh and India.		15
Lab./Field Training Contents	➤ Key to identify different types of earthworms. ➤ Identification of materials/waste products for vermiculture and vermicomposting. ➤ Study of systematic position, habits, and habitat & External characters of <i>Eisenia fetida</i>. ➤ Study of Life stages & development of <i>Eisenia fetida</i>. ➤ Culture of earthworms in Grow Bags. ➤ Study of devices and instruments of Vermiculture and Vermicomposting. ➤ Preparation of vermibed, maintenance of vermicompost & management of climatic conditions. ➤ Study the effects of vermicompost & vermiwash on any two short duration plants. ➤ Study of different methods of vermicomposting (NADEP Composting, Bangalore Method, Coimbatore Method & Indore Method). ➤ Creation of set up for vermiwash collection. ➤ Field Visit to Vermiculture & Vermicomposting sites and interaction with self help groups/ personnel engaged in these activities. ➤ Projects/ Assignments/ Chart/ Model preparation. ➤ Practical Record		30
Keywords	Earthworm, Vermiculture, Vermicomposting, Vermiwash, Grow Bags, NADEP.		
Signature of Convener & Members (CBoS):			



PART-C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –

- Chauhan, A. (2012) Vermitechnology, Vermiculture, Vermicompost and Earthworms: Vermiculture, Vermicomposting, Vermitechnology and Microbes, Lambert Academic Publishing, Germany.
- National Institute of Industrial Research, (2010): The Complete Technology Book on Vermiculture and Vermicompost, Published by National Institute of Industrial Research, Delhi-7, India.
- Kumar, A. (2005) Verms and Vermitechnology, APH Publishing.
- Bhatnagar & Patla, 2007. Earthworm vermiculture and vermin-composting, Kalyani Publishers, New Delhi.
- Sultan Ahmed Ismail, 2005. The Earthworm Book, Second Revised Edition. Other India Press, Goa, India.
- Panda Himadri: The Complete Technology Book on Vermiculture and Vermicompost (Earthworm) with Manufacturing Process, Machinery Equipment Details & Plant Layout; Asia Pacific Business Press Inc.
- EIRI Board : Hand Book Of Biofertilizers & Vermiculture.

Online Resources–

- https://agritech.tnau.ac.in/org_farm/orgfarm_composting.html#:~:text=In%20the%20Bangalore%20method%20of,laid%20over%20the%20moistened%20layer.
- <https://www.thepharmajournal.com/archives/2021/vol10issue12/PartAR/11-5-248-926.pdf>

Online Resources–

- <https://megbrdc.nic.in/publications/fliers-Pamphlets/nadep-composting-english.pdf>

PART-D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

Continuous Internal Assessment (CIA) By Course Coordinator)	Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance- 05 Total Marks - 15	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment A. Performed the Task based on learned skill - 20 Marks B. Spotting based on tools (written) - 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Coordinator as per skilling

Name and Signature of Convener & Members of CBoS:

Dr. Subhash Chandra Rahalkar

Dr. Naseem Ahmed
Mansuri

Dr. Ajit Kumar

Shobha Ram Yadav

Dr. R.K. Tamboli

Dr. Lata Meshram