SHRIDAVARAUNIVERSITY

NAYARAIPUR(C.G.)

PROGRAMMECURRICULUM

FOR

BECHELORINLIFESCIENCES

(CHEMISTRY, BOTANY AND ZOOLOGY(CBZ)

SEMESTER-II

AS PER NEW EDUCATION POLICY-2020

AND

NATIONAL EDUCATION POLICY-2025

FOUR YEAR UNDERGRADUATE PROGRAMME- 2024-25

(EFFECTIVEFROMTHESESSION-2024-2025)

INTRODUCTION OF THE DEPARTMENT: -

Department of Forestry and wildlife

Introduction

The Department Forestry and Wildlife involves the science and practice of managing forests for sustainable benefits like timber production, biodiversity, and ecosystem services. Our department make our understand about Wildlife management complements this by focusing on conserving and regulating animal populations within those habitats.

Mission

Our mission is to provide students with a rigorous and well-rounded education in Forestry and wildlife , preparing them for careers in research, Forest, Wildlife including Flora and Fauna, education, and beyond. We strive to create an inclusive and supportive environment that encourages collaboration, creativity, and intellectual curiosity.

Research Areas

Faculty and students in the Department of Forestry and wildlife engage in cutting-edge research in various areas, including:

1. In Forestry manages forests for timber, biodiversity, and ecosystem services, while wildlife focuses on conserving animal populations and habitats within these ecosystems.
2. In Sustainable conservation of forests and wildlife, ensuring ecological balance, biodiversity protection, and community livelihoods, as seen in India's IFS mandate.
3. In Biodiversity & Ecology: Studies on species conservation, forest dynamics, nutrient cycling, and habitat connectivity.
4. In Research Areas - Management & Climate Wildlife population dynamics, human-wildlife conflicts, climate adaptation, silviculture, and socioeconomic impacts.

Department of Botany

Introduction

The Department of Botany is a dynamic community of plant biologists, researchers, and students dedicated to exploring the fascinating world of plants. Our department offers undergraduate and postgraduate programs in botany, providing students with a comprehensive education in plant biology.

Mission

Our mission is to provide students with a rigorous and well-rounded education in botany, preparing them for careers in research, conservation, education, and beyond. We strive to create an inclusive and supportive environment that encourages collaboration, creativity, and intellectual curiosity.

Research Areas

Faculty and students in the Department of Botany engage in cutting-edge research in various areas, including:

1. Plant Systematics: Study of plant classification, evolution, and diversity.
2. Plant Physiology: Investigation of plant growth, development, and responses to environmental stimuli.
3. Plant Ecology: Study of plant interactions with their environment and other organisms.
4. Plant Biotechnology: Application of biotechnology to improve plant breeding, genetics, and agriculture.

Department of Zoology

Introduction

The Department of Zoology is a vibrant community of animal biologists, researchers, and students dedicated to exploring the fascinating world of animals. Our department offers undergraduate and postgraduate programs in zoology, providing students with a comprehensive education in animal biology.

Mission

Our mission is to provide students with a rigorous and well-rounded education in zoology, preparing them for careers in research, conservation, education, and beyond. We strive to create an inclusive and supportive environment that encourages collaboration, creativity, and intellectual curiosity.

Research Areas

Faculty and students in the Department of Zoology engage in cutting-edge research in various areas, including:

1. Animal Systematics: Study of animal classification, evolution, and diversity.
2. Animal Physiology: Investigation of animal growth, development, and responses to environmental stimuli.
3. Animal Ecology: Study of animal interactions with their environment and other organisms.
4. Animal Behavior: Study of animal behavior, including social behavior, communication, and learning.

VISION OF DEPARTMENT: -

Department of Chemistry

Vision

To be a leading department of chemistry, recognized for its academic excellence, innovative research, and commitment to fostering a community of scholars who can address the complex chemical challenges of the 21st century.

Objectives

1. To provide students with a world-class education in chemistry, emphasizing both theoretical foundations and practical applications.

2. To conduct cutting-edge research in chemistry, focusing on areas of national and global importance.

3. To foster collaborations with other departments, institutions, and industries to promote interdisciplinary research and innovation.

4. To develop and maintain state-of-the-art research facilities and instrumentation.

Department of Botany

Vision

To be a premier department of botany, dedicated to advancing our understanding of plant biology and addressing the critical challenges facing our planet, including climate change, food security, and conservation.

Objectives

1. To provide students with a comprehensive education in botany, emphasizing both theoretical foundations and practical applications.

2. To conduct innovative research in plant biology, focusing on areas of national and global importance.

3. To develop and maintain a diverse collection of plant specimens and living collections.

4. To foster collaborations with other departments, institutions, and industries to promote interdisciplinary research and innovation.

Department of Zoology

Vision

To be a leading department of zoology, recognized for its academic excellence, innovative research, and commitment to fostering a community of scholars who can address the complex challenges facing animal populations and ecosystems.

Objectives

1. To provide students with a world-class education in zoology,

emphasizing both theoretical foundations and practical applications.

2. To conduct cutting-edge research in animal biology, focusing on areas of national and global importance.

3. To develop and maintain state-of-the-art research facilities and instrumentation.

4. To foster collaborations with other departments, institutions, and industries to promote interdisciplinary research and innovation.

SCOPE OF DEPARTMENT: -

Department of Chemistry

Scope

1. Research and Development: Opportunities exist in various fields like medicinal chemistry, materials science, environmental chemistry, and analytical chemistry.

2. Industry and Manufacturing: Chemistry graduates can work in various industries like pharmaceuticals, petrochemicals, and materials manufacturing.

3. Environmental Conservation: Chemists can work in environmental monitoring, conservation, and sustainability.

4. Education and Academia: Chemistry graduates can pursue teaching and research careers in academic institutions.

5. Government and Policy: Chemists can work in government agencies, regulatory bodies, and policy-making institutions.

Department of Botany

Scope

1. Research and Development: Opportunities exist in various fields like plant breeding, genetic engineering, plant physiology, and plant ecology.

2. Agriculture and Horticulture: Botany graduates can work in agriculture, horticulture, and plant biotechnology industries.

3. Conservation and Environmental Science: Botanists can work in plant conservation, environmental monitoring, and sustainability.

4. Education and Academia: Botany graduates can pursue teaching and research careers in academic institutions.

5. Government and Policy: Botanists can work in government agencies, regulatory bodies, and policy-making institutions.

Department of Zoology

Scope

1. Research and Development: Opportunities exist in various fields like animal physiology, ecology, evolution, and conservation biology.

2. Wildlife Conservation and Management: Zoology graduates can work in wildlife conservation, management, and research institutions.

3. Animal Health and Veterinary Science: Zoologists can work in animal health, veterinary science, and animal biotechnology industries.

4. Education and Academia: Zoology graduates can pursue teaching and research careers in academic institutions.

5. Government and Policy: Zoologists can work in government agencies, regulatory bodies, and policy-making institutions.

PROGRAMME OUTCOME: -

1**. Knowledge and Understanding:** Demonstrate advanced knowledge and understanding of scientific principles, theories, and concepts in their chosen field.

2. **Critical Thinking and Analysis:** Apply critical thinking and analytical skills to evaluate scientific data, theories, and methodologies.

3. **Research and Problem-Solving:** Design, conduct, and analyze research experiments, and apply scientific principles to solve complex problems.

4. **Communication and Collaboration:** Communicate complex scientific ideas effectively to various audiences, and collaborate with others in a research or professional setting.

5. **Scientific Literacy and Critical Evaluation:** Evaluate the scientific literature, identify gaps in knowledge, and propose new research directions.

6. **Professional Development and Leadership:** Demonstrate leadership skills, manage projects, and develop a professional network in their chosen field.

7. **Knowledge and Understanding:** Demonstrate a solid understanding of scientific principles, theories, and concepts in their chosen field.

8. **Critical Thinking and Analysis:** Apply critical thinking and analytical skills to evaluate scientific data and theories.

9. **Scientific Literacy and Communication:** Communicate scientific ideas effectively to various audiences, and demonstrate an understanding of the scientific method.

10. **Problem-Solving and Laboratory Skills:** Apply scientific principles to solve problems, and demonstrate laboratory skills and safety protocols.

11. **Teamwork and Collaboration:** Collaborate with others in a laboratory or project setting, and demonstrate an understanding of the importance of teamwork in science.

12. **Preparation for Further Study or Employment:** Demonstrate preparation for further study or employment in a scientific field, and exhibit a commitment to lifelong learning.

COURSE OUTCOME: -

Department of Chemistry

Course Outcomes

1**. Knowledge of Chemical Principles:** Understand and apply fundamental chemical principles, theories, and concepts.

2. **Laboratory Skills:** Develop laboratory skills, including experimentation, data analysis, and safety protocols.

3. **Analytical and Problem-Solving Skills:** Apply analytical and problem-solving skills to solve chemical problems and analyze data.

4. **Communication Skills:** Communicate chemical concepts and research findings effectively through written and oral presentations.

5. Critical Thinking and Scientific Literacy: Evaluate scientific literature, identify gaps in knowledge, and propose new research directions.

Department of Botany

Course Outcomes

1. **Knowledge of Plant Biology:** Understand and apply fundamental principles of plant biology, including morphology, anatomy, physiology, and ecology.

2. **Plant Identification and Classification:** Identify and classify plants using morphological, anatomical, and molecular characteristics.

3. **Laboratory and Field Skills:** Develop laboratory and field skills, including plant collection, preservation, and experimentation.

4. Ecological and Environmental Awareness: Understand the importance of plants in ecosystems and the impact of human activities on plant diversity and ecology.

5. **Communication and Critical Thinking:** Communicate botanical concepts and research findings effectively and critically evaluate scientific literature.

Department of Zoology

Course Outcomes

1. **Knowledge of Animal Biology:** Understand and apply fundamental principles of animal biology, including morphology, anatomy, physiology, and ecology.

2. **Animal Identification and Classification:** Identify and classify animals using morphological, anatomical, and molecular characteristics.

3. **Laboratory and Field Skills:** Develop laboratory and field skills, including animal collection, preservation, and experimentation.

4. **Ecological and Environmental Awareness:** Understand the importance of animals in ecosystems and the impact of human activities on animal diversity and ecology.

5. **Communication and Critical Thinking:** Communicate zoological concepts and research findings effectively and critically evaluate scientific literature.

UNIT OUTCOME: -

Department of Chemistry

Unit 1: Atomic Structure and Chemical Bonding

1. Explain the structure of atoms and molecules.

2. Describe the types of chemical bonds and their properties.

3. Apply knowledge of atomic structure and chemical bonding to predict chemical behavior.

Unit 2: Thermodynamics and Kinetics

1. Understand the laws of thermodynamics and their applications.

2. Explain the principles of chemical kinetics and reaction mechanisms.

3. Apply thermodynamic and kinetic principles to solve chemical problems.

Unit 3: Organic Chemistry

1. Identify and classify organic compounds.

2. Explain the mechanisms of organic reactions.

3. Apply knowledge of organic chemistry to synthesize and analyze organic compounds.

Unit 4: Analytical Chemistry

1. Understand the principles of analytical chemistry techniques.

2. Apply analytical techniques to analyze and identify chemical substances.

3. Interpret analytical data to solve chemical problems.

Department of Botany

Unit 1: Plant Morphology and Anatomy

1. Identify and describe plant morphological and anatomical features.

2. Explain the functions of plant tissues and organs.

3. Apply knowledge of plant morphology and anatomy to understand plant development and evolution.

Unit 2: Plant Physiology

1. Understand the principles of plant physiology, including photosynthesis

and respiration.

2. Explain the mechanisms of plant growth and development.

3. Apply knowledge of plant physiology to solve problems in agriculture and horticulture.

Unit 3: Plant Ecology

1. Understand the principles of plant ecology, including community structure and ecosystem function.

2. Explain the interactions between plants and their environment.

3. Apply knowledge of plant ecology to understand and manage ecosystems.

Unit 4: Plant Genetics and Evolution

1. Understand the principles of plant genetics and evolution.

2. Explain the mechanisms of plant genetic variation and evolution.

3. Apply knowledge of plant genetics and evolution to understand plant diversity and adaptation.

Department of Zoology

Unit 1: Animal Morphology and Anatomy

1. Identify and describe animal morphological and anatomical features.

2. Explain the functions of animal tissues and organs.

3. Apply knowledge of animal morphology and anatomy to understand animal development and evolution.

Unit 2: Animal Physiology

1. Understand the principles of animal physiology, including nervous and circulatory systems.

2. Explain the mechanisms of animal growth and development.

3. Apply knowledge of animal physiology to solve problems in animal

health and welfare.

Unit 3: Animal Ecology

1. Understand the principles of animal ecology, including population dynamics and community structure.

2. Explain the interactions between animals and their environment.

3. Apply knowledge of animal ecology to understand and manage ecosystems.

Unit 4: Animal Genetics and Evolution

1. Understand the principles of animal genetics and evolution.

2. Explain the mechanisms of animal genetic variation and evolution.

3. Apply knowledge of animal genetics and evolution to understand animal diversity and adaptation.

SEMESTER II

S.NO	COURSE CODE	COURSE TITLE	TEACHING HOURS PER WEEK				EXAMINATION SCHEME				
DISCIPLINE SPECIFIC COURSE (DSC)			L	T	P	C	THEORY		PRACTICAL		TOTAL MARKS
							EX	IN	EX	IN	
1.	FOSC-02T	Fundamental of Soil Science	2	1	0	3	70	30	-	-	100
2.	BOSC-O2T	Microbes and Thallophyta	2	1	0	3	70	30	-	-	100
3.	ZOSC-02T	Cell Biology and Histology	2	1	0	3	70	30	-	-	100
GENERAL ELECTIVE (GE)											
4.	SCGE-02	Constitutional Government in India	3	1	0	4	70	30	-	-	100
ABILITY ENHANCEMENT COURSE (AEC)											
5.	AEC-02	Hindi Language	2	0	0	2	35	15	-	-	50
SKIILS ENHANCEMENT COURSE (SEC)											
6.	SEC-02	Chemistry Lab Skills -II	0	0	4	2	35	15	-	-	50
PRACTICALS (LAB)											
7.	FOSC-02P	Fundamental of Soil Science - LAB	0	0	2	1	-	-	35	15	50
8.	BOSC-O2P	Microbes and Thallophyta- LAB	0	0	2	1	-	-	35	15	50
9.	ZOSC-02P	Cell Biology and Histology- LAB	0	0	2	1	-	-	35	15	50
Total Contact hours Per Week:30		Total credit:				20	Total mark				650

SHRI DAVARA UNIVERSITY NAYA RAIPUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF FORESTRY AND WILDLIFE

COURSE CURRICULUM

PART-A:Introduction			
Programme: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)		**Semester-II**	**Session: 2025-2026**
Course Code	**CHSC-02T**		
Course Title	**FUNDAMENTAL OF SOIL SCIENCE**		
Course Type	**Discipline Specific course (DSC)**		
Pre-requisite(if any)	**As per program**		
Course Learning. Outcomes (CLO)	**At the end of this course, the students will be able to** ➢ **To Construct and interpret soil profile though filed observation and horizon delineation** ➢ **Execute standardized soil collection , processing and preparation techniques for laboratory analysis** ➢ **Isolate , Identify and characterization common soil microorganisms (Bacterial , fungi , actinomycetes) from diverse ecosystem using microscopy and culturing method** ➢ **Quantify soil parameters : pH and all.**		
Credit Value	**3 Credits**	**Credit =15 Hours-learning & Observation**	
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)	
I	Concepts of soil science , composition of earth Crust, classification Soil forming minerals – Definition , classification silicates oxides , carbonates , sulphides , phosphate occurrence , soil formation factors of soil formation , soil classification, soils of India , soil profile .	12
II	Weathering of rocks and minerals , weathering factors , types of weathering , physical weathering agents , physical weathering and their role chemical weathering solution hydration , hydrolysis , carbonation oxidation and reduction , biological agents involves.	11
III	Forest soil distinguishing features soil physical, biological and chemical properties , soil fertility , essential plant nutrient cycling mineral transformation carbon cycle , Nitrogen cycle , fertilizer , Bio fertilizer.	11
IV	Plant soil microbes interaction , Mycorrhizal , associations, Nitrogen fixation , soil	11

	degradation , , managements , interactions Of forest soils.	
Keywords		
Signature of Convener & Members (CBoS)		

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF FORESTRY AND WILDLIFE

COURSE CURRICULUM

PART-C: Learning Resources

Text Books, Reference Books and Others

- AK Mani; R Santhi and KM Sellamuthu, 2008.Fundamentals of Forest Soils, Satish Serial Pub. Dhuruva Narayana, V.V., Sastry, G. and Patnaik, V.S. 1990. Watershed management.ICAR Publication, New Delhi. Matt Burshe Christian P. Giardina, Dave and Morris and Debora S. Page Dumroese 2019. Global change ion forest soils, Esiver Science Publisher. Murty, J.V.S.1995. Watershed management in India.Wiley Eastern, New Delhi. Singh, P.K. 2000.Watershed management: Design and Practices. E-media publications, Udaipur, India. N.C. Brady 1990.The Nature and Properties of Soils: Macmillan Publishing Company, New York (10th Edition). Negi S.S., 2000. Forest Soils, International Book Distributors,. Osman, Khan Towhid, 2013. Forest Soils: Properties and Management, Springer Science publ. D. Binkley and R.F. Fischer (2000).Ecology and Management of Forest Soils (fifth addition Willey & Blackwell Publisher) S.A: Wilde 1995.Forest Soils and Forest Growth, Periodicals Express Book Agency, New Delhi, International Book Distributors, Dehradun.

Text Books Recommended-

Khanna, L.S. 1989. Principles and Practice of Silviculture. Khanna Bandhu, New Delhi,473p.2. Ram Prakash and L.S. Khanna. 1991. Theory and Practice of Silvicultural systems.International Book Distributors, Dehra Dun. 298p.3. Dwivedi, A.P. 1993. A Text Book of Silviculture, International Book Distributors,Dehradun.4. Dwivedi, A. P. 1992. Principles and Practice of Indian Silviculture, Surya Publication,420p.5. Champion, H, G and Seth, S.K. 1968. Forest types of India, revised survey of foresttypes of India, GOI Press,New Delhi, 404p.6. Negi, S.S. 1990. A Handbook of Forestry, International Book Distributors, Dehradun,690p.7. Shiva, M..P. 1986. A Handbook of Systematic Botany, .IBD Publisher, Dehradun.B.Sc.Forestry Syllabus, School of Forestry and Environment SHIATS-DU, Allahabad8. Luna, R.K. 1988. Plantation Forestry In India. International Book Distributors, Dehradun.p 476.9. Luna, R.K. Plantation Trees. International Book Distributors, Dehradun.10. Sagreiya, K.P. Forests and Forestry, 1997. National Book Trust India.11. Beazley, M. 1981. The International Book of Forest. Mitchell Beazly Publishers, London.12. Kanwar, J.S. 1976. Soil Fertility – Theory and practice ICAR publication, New Delhi.13. Persson, R. 1992. World forest resources. Periodical experts, New Delhi.14. Westoby, J. 1991. Introduction to World Forestry. Wiley, 240p.lq>k, x, fMftVy IysVQ,eZ osc fyaDl15. Grebner, D.L., Bettinger, P and Siry, J.P. 2012. Introduction to Forestry and NaturalResources. Academic Press. 508p (Google eBook)

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Online Resources- ➢ e-books and e-learning portals ➢ https://bit.lv/3AvV3mZ ➢ https://bit.ly/30V85z ➢ https://bit.ly/3C9PXPS ➢ https://bit.ly/301p9rZ ➢
Online Resources- e-sources/e-books and e-learning portals
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): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Semenar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10∗1=10 Marks Q2 Short answer type-5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks
Signature of Convener & Members (CBoS)	

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF FORESTRY AND WILDLIFE

COURSE CURRICULUM

PART- A: Introduction		
Program: Bachelor in Life Sciences **(Certificate/Diploma/Degree/Honors**	**Semester-II**	**Session: 2024-2025**
Course Code	**CHSC-02P**	
Course Title	**Lab. Course -01 (Fundamental of soil science)**	
Course Type	**Laboratory course**	
Pre-requisite(if any)	**As per program**	
Course Learning. Outcomes (CLO)	**At the end of this course, the students will be able to** ➢ 1. To understand and analyze different properties of forest soils and management of fertility and productivity. ➢ 2. To learn about the problems associated with tropical forest soils	

SHRI DAVARA UNIVERSITY NAYA RAIPUR

	and their management. ➢ 3. To understand the concept of watershed and sustainable approaches for watershed management for improving the forest health.	
Credits Value	**1 Credits**	**Credit =30 Hours Laboratory or Field learning/Training**
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 Content of Course	Study on soil profile , Soil Collection and Processing techniques , Determination of soil Ph, bulk density , porosity , moisture, texture, nitrogen, phosphorous , potassium , organic carbon and organic matter, Study of common Microorganisms in different ecosystems.	30
Keywords	**Porosity texture, moisture, bulk density.**	
Signature of Convener & Members (CBoS)		

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF CHEMISTRY

COURSE CURRICULUM

PART-C: Learning Resources
Text Books, Reference Books and Others
Text Books Recommended-
Khanna, L.S. 1989. Principles and Practice of Silviculture. 2. Khanna Bandhu, New Delhi,473p.2. 3. Ram Prakash and L.S. Khanna. 4.1991. Theory and Practice of Silvicultural systems.International Book Distributors, 5.Dehra Dun. 298p.3. Dwivedi, A.P. 1993.6. A Text Book of Silviculture, International Book Distributors,Dehradun.4. Dwivedi, A. P. 1992. 7. Principles and Practice of Indian Silviculture, 7. Surya Publication,420p.5. Champion, H, G and Seth, S.K. 1968. Forest types of India, revised survey of foresttypes of India, GOI Press,New Delhi, 404p.6. Negi, S.S. 1990. A Handbook of Forestry, International Book Distributors, Dehradun,690p.Bettinger, P and Siry, J.P. 2012. Introduction to Forestry and NaturalResources. Academic Press. 508p (Google eBook)

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Online Resources- ➢ E-resources/e-books and e-learning portals ➢ http://www.swayam.ac.in ➢ http://www.ignou.ac.in ➢ www.egyankosh.ac.in ➢ www.litm.ac.in ➢ www.eskillindia.org ➢ www.eshiksha.mp.gov.in ➢ www.vlab.co.in
Online Resources- e-sources/e-books and e-learning portals ➢ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5871155/ ➢ https://cms.botany.org/home/careers-jobs/careers-in-botany/arcas-of-specialization- in-botany.html ➢ Introduction to Forestry and NaturalResources. Academic Press. 508p (Google eBook)
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): 15 (By Course Teacher)	Internal Test/Quiz:10+10 Assignment/ Semenar-05 Total Marks-15	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

End Semester Exam (ESE):35	Laboratory/Field Skill Performance: On spot Assessment Section A : Performed the Task based on lab, work 20∗1=20 Marks B: Performed the Task based on lab, work (written) 10*1=10Marks Section B : Viva-voce (based on principle/technology) - 5*1=05 Marks

Signature of Convener & Members (CBoS)

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF BOTANY

COURSE CURRICULUM

PART-A:Introduction		
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)	**Semester-II**	**Session: 2024-2025**
Course Code	**BOSC-21T**	
Course Title	**MicrobesandThallophyta**	
Course Type	**Discipline Specific course (DSC)**	
Pre-requisite(if any)	**As per program**	
Course Learning. Outcomes (CLO)	**At the end of this course, the students will be able to** ➢ Understand aboutthe MicrobesandtheirImportance. ➢ Identify edible mushrooms andlearncultivationtechniques	

	➢ Learnaboutbio-fertilizersandtheiruses ➢ Understandlifecyclesofdifferentalgaeandfungi.	
Credit Value	**3 Credits**	**Credit =15 Hours-learning & Observation**
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)	
I	**Viruses:-**general characteristics,nature ,structure and nomenclature,Bacteriophages and TMVLytic and Lysogenic cycles,transmission and replication of viruses,Symptoms ofviraldiseases on plants ,important plant diseases,viroid,prions. **Actinomycetes:**general characteristicsStructure,reproduction and economic importance. **Mycoplasma,Phytoplasma:**general characteristics,structure,reproductionandtheireconomic uses.	12
II	**Bacteria:**History,general character,classification and morphology,Gram positive and Gram-negative bacteria,structure of bacteria shape,size flagella and ultra structureofbacterialcell Bacterial Growth curve,factors affectinggrowthof microbes;sporulation,reproduction,recombination in bacteria-Transformation Conjugation and Transduction,and Economicimportance. **Cyanobacteria:**General characteristics,morphology,Heterocyst,cell structure of Cyanobacteria,reproduction andeconomicimportance ofBacteria.	11
III	**Phycology:**General characteristic features of Algae.Algaein diversifiedhabitat,Salientfeatures,occurrence,classification and range of thallus organization.Prominent pigments foundin Algae.Reproduction classification,general character andlifecycleof -Volvox,Oedogonium,Chara,Vaucheria,EctocarpusandPolysiphonia.Economic importance of algae -Role of algaein soil fertility,algae as biofertilizer,blue green algae and nitrogen fixation.Symbiosis;algalproducts -Agar,biofuel	11
IV	**Mycology,MushroomCultivation,Lichenology&Mycorrhiza:**General characteristic features of Fungi,Economicimportance and ClassificationofFungi,Nutrition,Heterothallism, Physiological specialization,Heterokaryosis &Parasexuality in Fungi.Fungi as biocontrol agent Classification,general character andlife cycleof-Mucor,PhytophthoraPenicillium,Peziza.Ustilago,Puccinia,Agaricus;Colletotrichum,Alternaria.Edible Mushroom-Button and Oyster ,mushroom and their cultivation.General account oflichens.General account ofMyccorrhiza	11
Keywords	**Mycoplasma,Transduction,Biofertilizer,Para sexuality.**	

Signature of Convener & Members (CBoS)

SHRI DAVARA UNIVERSITY NAYA RAIPUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF BOTANY

COURSE CURRICULUM

PART-C: Learning Resources
Text Books, Reference Books and Others
1.Kumar,H.D.(1999).Introductory Phycology.AffiliatedEast-West.Press Pvt.Ltd.Delhi.2ndedition.
2.Tortora,G.J.,Funke,B.R.,Case,C.L.(2010).Microbiology:AnIntroduction,PearsonBenjaminCummings, U.S.A.10thedition.
3.Sethi,I.K.and Walia,S.K.(2011).Text book of Fungi &Their Allies,MacMillan Publishers Pvt.Ltd.,Delhi.
4.Aggarwal,S.K.2009.Foundation Coursein Biology,A one booksPvt.Ltd.,NewDelhi.
5.Aneja,K.R.1993.Experiments in Microbiology,Pathology and Tissue Culture,VishwaPrakashan,NewDelhi.
6..Annie Ragland,2012.Algae and Bryophytes,Saras Publication,Kanyakumari,India

7.Basu,A.N.1993.Essentials of Plant Viruses,Vectors and Plant diseases,New Age International,New Delhi.

8.Chopra.G.L.1984.A text book of Algae,Rastogi publications,Meerut,India

9.Dubey,R.C.andMaheshwari.D.K.2012.PracticalMicrobiology,S.Chand&Company,Pvt.Ltd.,NewDelhi.

10.Fritsch,R.E.1977.Structure and Reproduction ofAlgae,CambridgeUniversityPress,London.

11.Sharma,P.D.(2011).PlantPathology.Meerut,U.P:RastogiPublication.

12.Pandey B.P.2001.College Botany Volume1,S Chand&CompanyPvt.Ltd,NewDelhi.

Text Books Recommended-

1.Webster,J.,Weber,R.(2007).Introduction to Fungi,3rd edition.Cambridge,U.K:Cambridge University Press

2.Pelzar,1963.Microbiology,TataMcGrawHill,NewDelhi

3.Rangaswamy,G.2009,Disease of Crop PlantsinIndia,Prientice HallofIndia,NewDelhi.

4.Microbiology Fundamental and Applications(hindi)(pb)9.ISBN:9788188826230 Edition:03Year:

2016Author:Dr.Purohit SS,Dr.Deo Publisher:Student Edition Language:Hind

5.ModernMicrobiology(hindi)(hb)ISBN:9788177543599Edition:1Year:2018Author:Dr.PurohitSS,Dr.Singh T Publisher:Agrobios(India

6.Plant pathology by R.S.Mehrotra,Tata McGraw-Hill Publication

Online Resources-

- e-books and e-learning portals
- http://www.swayam.ac.in
- http://www.ignou.ac.in
- http://www.egvankosh.ac.in
- http://www.itm.sc.in
- http://www.eskillindia.org
- http://www.eshiksha.mp.gov.in
- http://www.viah.co.in
- http://www.internshala.com

Online Resources-
e-sources/e-books and e-learning portals

- https://www.pbs.org/video/botany-basics-iuu2bl/
- https://efaidohmannibpcapcalclefindorkaj/https://www2.ca.uky.edu/apcom/pubs/ho/ho96/ho96.pdf
- https://www.botanytoday.com/brunches-of-botany

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): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Semenar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

SHRI DAVARA UNIVERSITY NAYA RAIPUR

End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10*1=10 Marks, Q2 Short answer type 5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks
Signature of Convener & Members (CBoS)	

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF BOTANY

COURSE CURRICULUM

PART- A: Introduction			
Program: Bachelor in Life Sciences **(Certificate/Diploma/Degree/Honors**		**Semester-II**	**Session: 2024-2025**
Course Code	**BOSC-02P**		
Course Title	**Lab.Course-02(MicrobesandThallophyta)**		
Course Type	**Laboratory course**		
Pre-requisite(if any)	**As per program**		
Course Learning. Outcomes (CLO)	**At the end of this course, the students will be able to** ➢ Understand the Viruses,Bacteria,Phycology,MycologyandPlant ➢ pathology ➢ Learn microbial techniques which will be beneficial for agricultureandindustry. ➢ Learnlife cycles ofselectedgenera ofdifferentgroups Understand etiology of plantdiseases ➢ Apply their knowledge inthecropfieldstoeradicateoravoidthediseases		
Credits Value	**1 Credits**	**Credit =30 Hours Laboratory or Field learning/Training**	

SHRI DAVARA UNIVERSITY NAYA RAIPUR

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 Content of Course	1.Collection of viral/Bactrial/fungalinfectedplants 2.Study of plant disease symptomscaused byviral/Bactrial/fungal/Mycoplasma **3.BACTERIALIDENTIFICATION:** Isolation of bacteria Staining techniques:Gram's,staining 4.Study/Slide preparation of available Cyanobacteria **5.PHYCOLOGY:**Study/Slide preparation and Staining of algae-Volvox Oedogonium and Chara;Vaucheria;Ectocarpus Polysiphonia **6.MYCOLOGY:** Study/Slide preparation and.Staining of fungi.Mucor,PhytophthoraPenicillium,Peziza,Ustilago,Puccinia;Agaricus,colletotrichum,Alternaria StudyofButtonandOysterMushroom Lichens:crustose,foliose and fruticosespecimens StudyofVAMfungi	30
Keywords	**Infected P lants, VAM, Algae, Fungi**	

Signature of Convener & Members (CBoS)

SHRI DAVARA UNIVERSITY NAYA RAIPUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF BOTANY

COURSE CURRICULUM

PART-C: Learning Resources
1.Practical Botany(Part I)ISBN #:81-301-0008-8 Sunil D Purohit,Gotam K Kukda &Anamika Singhvi Edition:2013 Apex Publishing House Durga Nursery Road,Udaipur,Rajasthan (bilingual). 2.Pandey S.K.(2012).Quick Concept of Botany.Publisher LAP LAMBERT Academic Publishing GmbH&Co.KG,Germany (ISBN:978-3-8484-3104-5). 3.Dubey,R.C.andMaheshwari.D.K.2012.PracticalMicrobiology,S.Chand&Company,Pvt.Ltd.,NewDelhi. 4.Pandey.B.P.2014 Modern Practical Botany,(Vol-I)S.Chand and Company Pvt.Ltd.,NewDelhi.
Text Books Recommended-
Reference Books Recommended- 1. Charak Samhita 1 2. "Medicinal Plants of India" by C.P. Khare
Online Resources- ➢ E-resources/e-books and e-learning portals ➢ http://www.swayam.ac.in ➢ http://www.ignou.ac.in ➢ www.egyankosh.ac.in ➢ www.litm.ac.in ➢ www.eskillindia.org ➢ www.eshiksha.mp.gov.in ➢ www.vlab.co.in

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Online Resources- e-sources/e-books and e-learning portals ➢ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5871155/ ➢ https://cms.botany.org/home/careers-jobs/careers-in-botany/arcas-of-specialization- in-botany.html
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): 15 (By Course Teacher)	Internal Test/Quiz:10+10 Assignment/ Semenar-05 Total Marks-15	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

End Semester Exam (ESE):35	Laboratory/Field Skill Performance: On spot Assessment Section A : Performed the Task based on lab, work 20∗1=20 Marks B: Sporting based on lab, work (written) 10*1=10Marks Section B : Viva-voce (based on principle/technology) - 5*1=05 Marks
Signature of Convener & Members (CBoS)	

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF ZOOLOGY

COURSE CURRICULUM

PART-A:Introduction		
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)	**Semester-II**	**Session: 2024-2025**
Course Code	**ZOSC-02T**	
Course Title	**Cell Biology and Histology**	
Course Type	**Discipline Specific course (DSC)**	
Pre-requisite(if any)	**As per program**	
Course Learning. Outcomes (CLO)	**After successfully completing this course, the students will be able to –** ➢ **Acquire knowledge of Cell membrane and function** ➢ **Understand the functioning of nucleus and extra nuclear organelles and understand the intricate cellular mechanisms involved.** ➢ **Gain Knowledge of key processes like cell division,** ➢ **Learn about various tissues of body their structural significance**	

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Credit Value	3 Credits	Credit =15 Hours-learning & Observation
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)	
I	**Cell Structure,Cell Membrane and Extra Nuclear Cell Organelles:** General structure of Prokaryotes and Eukaryotes. Cell membrane organization: Origin, structure (Lipid-Lipid Bilayer Model, Dannelli & Davson Model, Unit Membrane Model and Fluid mosaic model), chemical composition and function of cell membrane, Specialization of cell membrane: microvilli desmosomes, Hemidesmosome, Septate Desmosome, plasmodesmata, tight and gap junction. **Extra Nuclear Cell Organelles:** Ultra structure and functions of Endoplasmic reticulum and Golgi apparatus.	12
II	**Extra Nuclear Cell Organelles:** Ultra structure and functions of Ribosome, Lysosome, Peroxisomes, Mitochondria: Origin, structure and function.	11
III	**Nuclear Organization and Cell Division:** Size, shape, structure and functions of interphase nucleus. Ultra structure of nuclear membrane and pore complex. Nucleolus: general organization, chemical composition and functions, Chromosome Morphology, Cell cycle, Cell division- Mitosis and Meiosis. Cell division checks points and their regulation. Programmed cell death (Apoptosis).	11
IV	**Introduction to tissues. Epithelial tissue:** types, structure and characteristics. surface modifications. Basement membrane: structure and characteristics. Connective tissue cells. Structure and function of loose, dense and adipose tissue. Cartilage and bone: classification, and fine structure. Blood: plasma, blood cells, lymph- their structure and function. Bone marrow and hemopoiesis. Structure and function of spleen. Muscular tissue: ultrastructure of smooth, skeletal and cardiac muscles. Muscle-tendon attachment. Structure and classification of neurons.	11
Keywords	**Cell Biology, Cell Membrane, Cell organelle, Nucleus, endoplasmic reticulum and Golgi apparatus, ribosome, lysosome, peroxisomes, Mitochondria, tissues.**	

Signature of Convener & Members (CBoS)

SHRI DAVARA UNIVERSITY NAYA RAIPUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF ZOOLOGY

COURSE CURRICULUM

PART-C: Learning Resources
Text Books, Reference Books and Others
Text Books Recommended-
1. E. J. W. Barrington, Invertebrate structure and function, English Language Book Society UK. 2. Robert Barnes, Invertebrate Zoology, Robert Barnes IVth edition Holt Saunders International Edition Japan. 3. Park Haswell, Marshall and Williams, A textbook on Zoology Invertebrate, AITBS Publishing and Distributers, Delhi. 4. Park Haswell, Marshall and Williams, A textbook on Zoology Vertebrate, ATTBS Publishing and Distributers, Delhi. **Reference Books Recommended-** 1. ProfR. L. Kotpal, Protozoa to Echinodermata, Rastogi Publication Meerut. 2. EL. Jordan, Dr. P. S. Verma, Invertebrate Zoology, S. Chand Publications, New Delhi. 3. N. Arumugam, N. C. Nair S. - Invertebrate Zoology, Saras Publication.. 4. Barrington E. J. W., Invertebrate Structure and Function, Nelson London. 5. Barnes, R. D., Invertebrate Zoology-Saunders Philadelphia. 6. R. L. Kotpal, Invertebrate, Rastogi Publications R. I.. Kotpal, Vertebrate, Rastogi Publications. 7. H. S. Bhampah, KavitaJuneja, Recent trends in vertebrates vol 1-9, Anmol Publication. 8. S. N. Prasad, Life of invertebrates, Vikash Publication House Pvt Ltd New Delhi. 9. G. S. Sandhu, Harshwardhan Bhagskar-Advanced invertebrate zoology-Campus books international.
Online Resources- ➢ e-books and e-learning portals ➢ https://www.coursera.org/lecture/emergence-of-life/4-5-invertebrates-successes-of-life-http://www.ignou.ac.in ➢ https://www.shiksha.com/online-courses/introduction-to-biology-biodiversity-course-http://www.itm.sc.in ➢ https://www.youtube.com/watch?v=uK-XYhttp://www.eshiksha.mp.gov.in ➢ https://www.youtube.com/watch?v=WxMSckEcio4http://www.internshala.com

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Online Resources- e-sources/e-books and e-learning portals ➢ https://www.pbs.org/video/botany-basics-iuu2bl/ ➢ https://efaidohmannibpcapcalclefindorkaj/https://www2.ca.uky.edu/apcom/pubs/ho/ho96/ho96.pdf ➢ https://www.botanytoday.com/brunches-of-botany
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): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Semenar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10*1=10 Marks Q2 Short answer type 5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks
Signature of Convener & Members (CBoS)	

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF ZOOLOGY

COURSE CURRICULUM

PART- A: Introduction			
Program: Bachelor in Life Sciences **(Certificate/Diploma/Degree/Honors**		**Semester-II**	**Session: 2024-2025**
Course Code	**BOSC-02P**		
Course Title	**Lab. Course -03Cell Biology and Histology**		
Course Type	**Laboratory course**		
Pre-requisite(if any)	**As per program**		
Course Learning. Outcomes (CLO)	**After successfully completing this course, the students will be able to -** ➢ **Understand ultra structure of prokaryote and Eukaryote cell, undertake microscopic study to gain knowledge** ➢ **learn to identify cell organelles** ➢ **Explain and demonstrate mitosis and meiosis division in onion root tip, Grass hopper testis, etc** ➢ **Gain knowledge of Microtomy**		
Credits Value	**1 Credits**	**Credit =30 Hours Laboratory or Field learning/Training**	
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

Comment [u1]:

Lab/ field Training/ Experiment Content of Course	1.Study of prokaryotic and eukaryotic cell types with the help of chart, slide and video. 2.Separation and isolation of cells by sedimentation velocity in unit gravity. 3. Disruption of cells, isolation and identification of subcellular components, isolation of nuclei. 4. Isolation of mitochondria by differential centrifugation and identification of succinic dehydrogenase in the mitochondrial pellet. 5. Chromosome segregation in mitosis and meiosis. 6. Preparation of chromosome squashes from Onion Root tip for observation of stages of Mitosis 7. Preparation of chromosome squashes from grasshopper/cockroach testes for the observation of stages of meiosis. 8. Isolation and estimation of DNA. 9. Study of types of tissue through permanent slides: epithelial, connective, muscular, Nervous etc. 10. Preparation of Practical Record 11. Group discussion/Viva or Seminar presentation on related topicsmentioned in Theory paper	30
Keywords	**Prokaryote, Eukaryote, cell division, Mitosis, Meiosis, DNA Separation, Histology of Tissue, Microtomy**	
Signature of Convener & Members (CBoS)		

SHRI DAVARA UNIVERSITY NAYA RAIPUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF ZOOLOGY

COURSE CURRICULUM

PART-C: Learning Resources
Text Books, Reference Books and Others
Text Books Recommended- 1. S.S. Lal, Practical Zoology, Invertebrate. 12 Edition Rastogi Publications, Meerut, New Delhi. 2. A manual of practical Zoology. Dr. P.S Verma, S. Reference Books Recommended- Chand Publication, New Delhi.
Reference Books Recommended- 1. Park Haswell, Marshall and Williams, A textbook on Zoology Invertebrate, AITBS Publishing and Distributers, Delhi . 2. Park Haswell, Marshall and Williams, A textbook on Zoology Vertebrate, AFTBS Publishing and Distributers, Delhi.

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Online Resources- ➢ E-resources/e-books and e-learning portals ➢ http://ndi.ätkgp.ac.in/he/document/swayamprabha/swayam ➢ http://www.swayam.ac.in ➢ http://www.ignou.ac.in ➢ www.egyankosh.ac.in ➢ www.litm.ac.in ➢ www.eskillindia.org ➢ www.eshiksha.mp.gov.in
Online Resources- e-sources/e-books and e-learning portals ➢ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5871155/ ➢ https://cms.botany.org/home/careers-jobs/careers-in-botany/arcas-of-specialization- in-botany.html

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): 15 (By Course Teacher)	Internal Test/Quiz:10+10 Assignment/ Semenar-05 Total Marks-15	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

End Semester Exam (ESE):35	Laboratory/Field Skill Performance: On spot Assessment Section A : Performed the Task based on lab, work 20∗1=20 Marks B: Spotting frased on tools & technology (written) 10*1=10Marks Section B : Viva-voce (based on principle/technology) - 5*1=05 Marks

Signature of Convener & Members (CBoS)

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF POLITICAL SCIENCES

COURSE CURRICULUM

PART-A:Introduction		
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)	**Semester-II**	**Session: 2024-2025**
Course Code	**PSGE-02**	
Course Title	**Constitutional Government in India**	
Course Type	**Discipline General Elective course (GE)**	
Pre-requisite(if any)	**As per program**	
Course Learning. Outcomes (CLO)	**After completion of the course, the student shall be able to..** ➢ Construct the political ideals mentioned in the preamble of the constitution.	

	➢ Assess the provisions of citizenship, fundamental rights and duties and their correlation. ➢ Examine the role of president and the functioning of union executive. ➢ Interpret the provisions and functioning of the union legislature and constitutional bodies of functional democracy, like election commission, finance commission and C&AG.	
Credit Value	**4 Credits**	**Credit =60 Hours-learning & Observation**
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)	
I	**Constitution Citizenship and Rights** Making of Indian Constitution: Cabinet mission plan and Constituent assembly. Preamble, features, Sources. Schedules, citizenship. Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process.	12
II	**Union** President, Vice President, Council of Ministers and Prime Minister. Federal Parliament Lok Sabha and Rajya Sabha. Supreme court Organization Functions, Powers, Judicial Review.	11
III	**Union and Federal administration** controller and auditor general Centre State Relations: Legislative, Financial, Administrative. Union and state public service commission, Election Commission, Finance Commission.	11
IV	**State and Local self government** Legislature, Executive: Governor, Council of Ministers and Chief Minister. State High Court-Organization. Functions, Rights.	11
Keywords	Political theory, sate, sovereignty, right, they, democracy, constitution, party.	

Signature of Convener & Members (CBoS)

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF POLITICAL SCIENCE

COURSE CURRICULUM

PART-C: Learning Resources
Text Books, Reference Books and Others
Text Books Recommended-

SHRI DAVARA UNIVERSITY NAYA RAIPUR

1. Ambadatt Pant Harimohan Jain Madan Gopal (1985) Fundamentals of Political Science, Central Publishing House Allahabad. U.P.
2. Sandhu Man Singh (1956) Political Theory Hindi Medium Implementation Directorate, Delhi University, New Delhi
3. Johari JC 1916) Basic principles of political science, Sahitya Bhavan, Agra.
4. Rajeev and Ashok Acharya (Eds) Political Theory A Flag, Dilsey Pearson, 2008

Reference Books Recommended-

1 umar, Sanjeev (Ed. Understanding of Political Theory, Delhi: Orient Book Swan, 2019
2 Hussain Shakeel (2018) Conceptual Introduction to Political Theory. Chhattisgarh State Hindi Forest Academy, Rampur.
3 K.K. Mishra (2010) Political Theory, 5. Chand Publishing Delhi
4 OP Gouba (2014) An Introduction to Political Theory, MacMillan Publishers, Delhi

Online Resources-

- e-books and e-learning portals
- https://www.coursera.org/lecture/emergence-of-life/-http://www.ignou.ac.in
- https://www.shiksha.com/online-courses/-http://www.itm.sc.in
- https://www.youtube.com/watch?v=uK-XYhttp://www.eshiksha.mp.gov.in
- https://www.youtube.com/watch?v=WxMSckEcio4http://www.internshala.com

Online Resources-
e-sources/e-books and e-learning portals

- https://www.pbs.org/video/political-basics-iuu2bl/
- https://efaidohmannibpcapcalclefindorkaj/https://www2.ca.uky.edu/apcom/pubs/ho/ho96/ho96.pdf
- https://www.botanytoday.com/brunches-of-botany

RT -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): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Semenar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10*1=10 Marks Q2 Short answer type 5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks

Signature of Convener & Members (CBoS)

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF HINDI

COURSE CURRICULUM

PART-A:Introduction

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)	Semester-II	Session: 2024-2025

Course Code	**AEC-02**	
Course Title	**Hindi Language**	
Course Type	**Ability Enhancement Course (AEC)**	
Pre-requisite(if any)	**As per program**	
Course Learning. Outcomes (CLO)	**After the completion of this course, the students will be able to-** ➢ विद्यार्थीहिन्दीभाशाएवंव्याकरणसंबंधीज्ञानसेसमृद्धहोंगे। ➢ भाशाज्ञानकेमाध्यमसेभारतीयसंस्कृतिएवंभावनात्मकएकताके महत्व को समझने की क्षमता विकसित हो सकेगी। ➢ मुहावरेएवंलोकोक्तियाँकामहत्वसमझसकेंगे ।व्यंग्य,निबंध एवं कविताविद्यासेपरिचितहोंगे। ➢ निबंधलेखनएवंअपठितगद्यां ाकेमाध्यमसेविद्यार्थियोंका बौद्धिक विकास हो सकेगा।	
Credit Value	**2 Credits**	**Credit =30 Periods-learning & Observation**
Total Marks	**Max. Marks:=50**	**Min Passing Marks: 20**

PART -B: Content of the Course

Total No. of Teaching-learning Periods (45 Min. per period) -30 Periods

Unit	Topics (Course contents)	
I	**jpuk,a** **भारतवंदना–सूर्यकांतत्रिपाठी'निराला'(कविता)** **जीव–हरि□ांकरपरसाई(व्यंग्य)चोरीऔरप्रार्या□चत–महात्मागांधी (निबंध)**	08
II	**हिन्दीव्याकरणएवंभाब्दरचना** **प्रत्यय,संधिसमास** **पर्यायवाचीभाब्द,विलोमभाब्द,अनेकार्थीभाब्द,समश्रुतभाब्द,अनेक भाब्दोंकेलिएएकभाब्द**	07
III	**हिन्दीव्याकरण एवंरचनापक्ष** **मुहावरेएवंलोकोक्तियां** **परिभा□ाक□ाब्दावलीएवंहिन्दीमेंपदनाम,□ाब्द□ुद्धि,वाक्य□ुद्धि**	08
IV	**रचनात्मकलेखन** **निबंधलेखन** **अपठितगद्यां□ा** ½uksV& fo|kFkhZ dks fdlh ,d fo'k; ij fuca/k o iznRRk x|ka"k dk f"k'kZd rFkk lkjka"k fy[kuk gksxkA½	07
Keywords	**रचनात्मक लेखन निबंध लेखन हिन्दीव्याकरण एवंरचनापक्ष**	

Signature of Convener & Members (CBoS)

SHRI DAVARA UNIVERSITY NAYA RAIPUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF HINDI

COURSE CURRICULUM

PART-C: Learning Resources
Text Books, Reference Books and Others

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Text Books Recommended-

Reference Books Recommended-

1- भारतीयताकेअमरस्वर–डॉ.धनंजयवर्मा,मध्यप्रदे ाहिन्दीअकादमी
2- आधुनिकहिन्दीव्याकरणऔररचना–डॉवासुदेव नंदन
3- हिन्दीभाशाऔरव्यवहार–डॉ.गंगाचरणत्रिपाठी
4- हिन्दीव्याकरण माला–डॉ.के.आर.गहिया,डॉविमले ाभार्मा
5- हिन्दीव्याकरण–कामताप्रसादगुरू

Online Resources-

- pdf https://www.youtube.com/watch?v=uK-XYhttp://www.eshiksha.mp.gov.in
- https://www.youtube.com/watch?v=WxMSckEcio4http://www.internshala.com
- https://archive.org/details/personality-development-book/mode/lup
- https://www.coursera.org/articles/presentation-skills
- https://www.cbs.de/en/blog/15-effective-presentation-tips-to-improve-presentation-skills/
- https://benjaminball.com/blog/good-body-language-best-visual-aid-talks/
-

Online Resources-

- e-sources/e-books and e-learning portalshttps://blog.moderngov.com/importance-of-body-language-in-presentations-good-bad-
- https://efaidohmannibpcapcalclefindorkaj/https://www2.ca.uky.edu/apcom/pubs/ho/ho96/ho96.pdf
- https://www.botanytoday.com/brunches-of-botany

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): 15 (By Course Teacher)	Internal Test/Quiz:10+10 Assignment/ Semenar-05 Total Marks-15	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks

End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 1*5=5 Marks Q. Short answer type 2*5=10 (I. Vocabulary, II Unseen passage Section B : Descriptive answer type qts 1 out of 2frm each- 5*4=20 Marks

Signature of Convener & Members (CBoS)

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF CHEMISTRY

COURSE CURRICULUM

SHRI DAVARA UNIVERSITY NAYA RAIPUR

PART-A:Introduction			
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)		**Semester-II**	**Session: 2024-2025**
Course Code	**SEC-01**		
Course Title	**Chemistry Lab Skills -II**		
Course Type	**Skill Enhancement Course (SEC)**		
Pre-requisite(if any)	**As per program**		
Course Learning. Outcomes (CLO)	**Completing this course, students will be able to: -** ➢ **To understand different acid-base theories and solvent system.** ➢ **To learn the preparation, bonding, and reactions of C-C σ- & π-bonded compounds.** ➢ **To understand the concept and chemistry of aromatic compounds and their reactions.** ➢ **To learn the basic concepts of various states of matter & understand the basic concepts of surface chemistry and chemical kinetics.**		
Credit Value	**1 Credits**	**Credit =30Periods-learning & Observation**	
Total Marks	**Max. Marks:=50**	**Min Passing Marks: 20**	

PART -B: Content of the Course

Total No. of Teaching-learning Periods (45 Min. per period) -15 Periods

Unit	Topics (Course contents)	
I	**Introduction of Chemistry Laboratory** General introduction of the chemistry laboratory, common instructions for safe working in chemical laboratories, Good Laboratory Practices (GLP), Good Manufacturing Practices (GMP).Laboratory design, Storage, ventilation, lighting, fume, cupboard, arrangement of the store, Safety provisions, Organization of practical work, Maintenance of laboratory, equipment Cleaning of laboratories and glasswares/ plasticwares and preparation room. Classification ofapparatus in store and laboratory.	08
II	**Introduction of Chemistry Apparatus** Glass apparatus - Beaker, test tube, boiling tube, funnel, separating funnel, filtrationflask, roundbottom flask, flat bottom flask, condenser Liebig flask, watglass etc. measuring conical orcondenser, Petridis, desiccators. Volumetric Apparatus – Measuring cylinder, burette, pipette,volumetric flask, analytical balance, single-pan electronic balance/ electrical analytical balance,Micropipette, Three way Pipette Bulb etc.	07
III	**Introduction of Chemistry Equipments**Clevenger apparatus, Buchner funnel, Soxhlet extractor, wire gauze, cork borers, filter pumps,crucible, mohr clip, pipe clay triangle, pestle and mortar, sprit lamp,spatulas, thermometer, pHmeter.	08
IV	**Introduction of Chemistry Equipments**- laboratory centrifuge. Apparatus for heating and reaction: Magnetic Stirrer, Bunsenburner, water bath, oil bath hot plate, sand ,bath, hot air oven, heating mantle etc.	07
Keywords	*Introduction of Chemistry Laboratory.* Introduction of Chemistry Apparatus. Introduction of Chemistry Equipments.	
Signature of Convener & Members (CBoS)		

SHRI DAVARA UNIVERSITY NAYA RAIPUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OFCHEMISTRY

COURSE CURRICULUM

PART-C: Learning Resources

[Type text]

Text Books, Reference Books and Others

Text Books Recommended-

- Bahl, A., & Bahl, B. S. (2014). Organic Chemistry (22nd Ed.). S. Chand & Sons.
- Ahhuwalia, V. K., & Goyal, M. (2001). A Textbook of Organic Chemistry. Narosa Publishing House.
- . Jain, M. K., & Sharma, S. C. (2017). Modern Organic Chemistry. Vishal Publishing Company. Puri, B. R., Sharma, L. R., & Pathania, M. S. (2013). Principles of Physical Chemistry (46th Ed.)..
- Shoban Lal Nagin Chand And Co. 5. Bahl, B. S. A., & Tuli, G. D. (2009). Essentials of Physical Chemistry (Multicolour Ed.). S. Chand& Company Pvt Ltd. 6. Puri, B. R., Sharma, L. R., & Kalia, K. C. (2018). Principles of Inorganic Chemistry. Nagin Chand and Co., New Delhi,

Reference Books Recommended-

- Paula, B. Y. (2014). Organic Chemistry (7th Ed.). Pearson Education, Inc. (Singapore).
- Solomons, T. W. G. (2017). Organic Chemistry (Global Ed.). John Wiley & Sons.
- Morrison, R. T., & Boyd, R. N. (2010). Organic Chemistry (7th Ed.). Prentice-Hall Of India Limited.
- Laidler, K. J., & Meiser, J. H. (2006). Physical Chemistry (2nd Indian Ed.). CBS Publishers.
- . Atkins, P. W., & De Paula, J. (2006). Physical Chemistry (8th Ed.). Oxford University Press.
- . Dogra, S., & Dogra, S. (2006). Physical Chemistry through Problems (2nd Ed.). New Age International.
- Sangaranarayanan, M. V., & Mahadevan, V. (2011). Textbook of Physical Chemistry. University Press.

Online Resources-

- Introduction to Computer Fundamental from W3school: https://www.w3schools.blog/computer-fundamentals-tutorial
- Introduction to MS-Word from W3school: https://www.w3schools.blog/ms-word-tutorial
- Introduction to MS-Excel from W3school:https://www.w3schools.com/excel/excel_introduction.php
- ntroduction to MS-PowerPoint from W3school:https://www.w3schools.blog/powerpoint-tutorial Introduction to MS-Access from W3school:
- https://www.youtube.com/watch?v=WxMSckEcio4http://www.internshala.com

Online Resources-
e-sources/e-books and e-learning portals

- https://www.rgycsm.org/uploads/books/MICROSOFT-OFFICE-BOOK.pdf
- https://www.youtube.com/watch?v=SH40YV5AJ6A
- https://www.youtube.com/watch?v=SH40YV5AJ6A
- https://hte.rajasthan.gov.in/dept/dte/board

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

SHRI DAVARA UNIVERSITY NAYA RAIPUR

Continuous Internal Assessment (CIA): 15 (By Course Teacher)	Internal Test/Quiz:10+10 Assignment/ Semenar-10 Total Marks-15	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):50	Two section A&B Section A :Q1 Objective 5*1=5 Marks Q2 Short answer type 5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 10*1=10 Marks	
Signature of Convener & Members (CBoS)		