MARKS DISTRIBUTION OF B.Sc.B.Ed.FOUR YEAR INTEGRATED COURSE
B.Sc.B.Ed. III SEM. [CORE COURSE]

Section	Paper	Subject	Total Marks	External Marks		Exam Pattern	Internal Marks		Marks Distribution	Remark
				Max	Min		Max	Min		
Foundation part	F-1	Moral Values & Language-I	75	50	20	Written Exam by University	25	10		COLLEGE SEND THIS MARKS DIRECTLY TO UNIVERSITY
	F-2	Environmental Studies	75	50	20		25	10		
Science part	S-1	Any three subject from given list	100	75	30		25	10		
	S-2		100	75	30		25	10		
	S-3	Physics, Chem., Botany, Zoology, Maths ***Subject specified in the scheme by board of studies will only be considered**	100	75	30		25	10		
		*Note: in case of mathematics, theory	150	125	50		25	10		
Education part	CC-5	Gender School and Society	100	75	30		25	10	Attendance(5 marks) 1st test(5 marks) 2nd test(5marks) Assignment(10marks)	
		Total	650							

PRACTICALS

SCIENCE PART	PS-I/2/3	According to selection of subject in S-1, S-2 & S-3	50 each			Practical Exam by external Appointed by University			Practical Examiners and Internal (who teaches subject) send this marks after Practical exam with total 50 marks
		TOTAL	100/150						
		Theory total	650						
		Practical total	150						
		Total	800						
Education Part	EPC1	Reading and reflecting on texts	50	35			15		

11/11/2020

11.11.2020

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class	:	B.A./B.Sc./B.Com./B.H.Sc. II Year
Semester	:	III
Subject	:	Foundation Course (आधार पाठ्यक्रम)
Paper	:	I
Title of Paper	:	नैतिक मूल्य और भाषा (Moral Values & Language)
Compulsory/ Optional	:	Compulsory
Max. Marks	:	75 (85) (Moral Education- 15, Hindi- 35, English- 35) 30 20

Particulars

Part - A MM 30

Unit – 1	नैतिक मूल्य 1. शिकागो व्याख्यान – स्वामी विवेकानंद 2. धर्म और राष्ट्रवाद – महर्षि अरविन्द 3. सादगी – महात्मा गांधी 4. भय से मुक्ति – जे कृष्णमूर्ति 5. चित्त जहाँ भय शून्य – रवीन्द्रनाथ ठाकुर	15
Unit – 2	हिन्दी भाषा 1. कछुआ धर्म (निबंध) – चन्द्रधर शर्मा 'गुलेरी' 2. वह तोड़ती पत्थर (कविता) – निराला 3. सपनों की उड़ान (प्रेरक निबंध) – ए.पी.जे. अब्दुल कलाम 4. चीफ की दावत (कहानी) – भीष्म सह्नी 5. वर्ण–विन्यास (व्याकरणपरक) – विश्वनाथ प्रसाद मिश्र	17
Unit- 3	हिन्दी भाषा 1.आदिवासी धरोहर (निबंध) – डॉ. श्यामाचरण दुबे 2.नारीत्व का अभिशाप (निबंध) – महादेवी वर्मा 3.ब्रह्माण्ड की रचना (वैज्ञानिक लेख) – जयंत विष्णु नार्लीकर 4.प्रमुख वैज्ञानिक आविष्कार (संकलित) 5.संधि और समास (संकलित)	18

Part - B MM 20

Unit- 4	**English Language** 1. Tree : Tina Morris 2. Night of the scorpion : Nisssim Ezekiel 3. What is Science? : George Orwell 4. On the Rule of the Road : A.G. Gardiner	17
Unit- 5	**English Language** Comprehension of Unseen Passages, Paragraph Writing, Report- writing, Short Essay on a given topic Correspondence skills (Formal & Informal Letters and Application) Basic language skills : Tenses, prepositions, determiners, verbs & Articles	18

* सैद्धान्तिक परीक्षा हेतु उपरोक्तानुसार 85 (15+35+35) अंक और आन्तरिक मूल्यांकन (सीसीई) हेतु पृथक से 15 (5+5+5) अंक निर्धारित है।

DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class - बी.ए./बी.कॉम./बी.एस.सी./बी.एस.सी. गृह विज्ञान/बी.सी.ए.
Subject - आधार पाठ्यक्रम
Paper Title - पेपर II . पर्यावरणीय अध्ययन
Semester – III

कुल अंक– थ्योरी 50 (35 + 15) ~~सी.सी.ई.~~

इकाई–1 पर्यावरण एवं पारिस्थितकीय अध्ययन

(क) परिभाषा एवं महत्व

(ख) जनभागीदारी एवं जन जागरण

इकाई–2 पर्यावरणीय प्रदूषण

(क) वायु, जल, ध्वनि, ताप एवं आणविक प्रदूषण–परिभाषा, प्रदूषण के कारण, प्रभाव एवं रोकथाम

(ख) आपदा प्रबंधन– बाढ़, भूकंप, चक्रवात एवं भूस्खलन

इकाई–3 पर्यावरण और सामाजिक समस्याएँ

(क) धारणीय विकास

(ख) नगरों की ऊर्जा समस्या, सौर ऊर्जा, जैविक ईधन तथा पवन ऊर्जा

(ग) जल संरक्षण– वर्षा, जल–संग्रहण

इकाई–4 प्राकृतिक संसाधनों के संरक्षण में मनुष्य की भूमिका

(क) खाद्य–आहार संसाधन – विश्व आहार समस्या

(ख) ऊर्जा संसाधन– ऊर्जा की बढ़ती मांग

इकाई पाँच– पर्यावरण संरक्षण कानून

(क) वायु तथा जल प्रदूषण–संरक्षण कानून

(ख) वन्य प्राणी संरक्षण कानून

(ग) पर्यावरण तथा स्वास्थ्य रक्षा में सूचना प्रौद्योगिकी की भूमिका

संदर्भ पुस्तक– मध्यप्रदेश हिन्दी ग्रंथ अकादमी, भोपाल द्वारा प्रकाशित पुस्तक

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class	-	B.A./B.Sc./B.Com./B.H.Sc./BCA II
Subject	-	Foundation Course
Paper Title	-	Paper II : Environmental Studies
Semester	–	III

Max. Marks– Theory 35+15 ~~CCE~~ 50

Unit - I Study of Environment and ecology:

(a) Definition and Importance.

(b) Public participation and Public awareness.

Unit - II Environmental Pollution :

(a) Air, water, noise, heat and nuclear pollution- Definition, Causes, effect and prevention of pollution.

(b) Disaster management – Flood, Earthquake, cyclones and landslides.

Unit - III Environment and social problems :

(a) Sustainable development- Introduction

(b) Energy problems of cities, solar energy, biogas and wind energy

(c) Water conservation – rain-water harvesting.

Unit - IV Role of mankind in conserving natural resources :

(a) Food resources – World food problem.

(b) Energy resources – increasing demand for energy.

Unit - V Environment conservation laws :

(a) Conservation laws for air and water pollution.

(b) Wildlife conservation laws.

(c) Role of information technology in protecting environment & health.

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class: B.Sc.

Max. Marks: 85 + (CCE) 15 = 100

Semester : III
Subject : Physics
Title of Paper : **Optics**

Unit-I

[15 Lectures]

Geometrical Optics

Reflection and refraction: Fermat's Principle, Refraction at a spherical surface, Aplanatic points and its applications, Lens formula, Combination of thin lenses and equivalent focal length.

Optical instruments: Dispersion and dispersive power, chromatic aberration and achromatic combination, different types of aberration (qualitative) and their remedy. Need for multiple lenses in eyepieces, Ramsden and Huygens eye-piece.

Unit-II

[15 Lectures]

Interference of light

The principle of superposition, two slit interference, coherence requirement for the sources, optical path retardations, Lateral shift of fringes, Rayleigh refractometer and other applications. Localised fringes, thin films, interference by a film with two non-parallel reflecting surfaces, Newton's rings.

Haidinger fringes (Fringes of equal inclination), Michelson interferometer, its application for precision determination of wavelength, wavelength difference and the width of spectral lines. Intensity distribution in multiple beam interference, Fabry-Perot interferometer and Etalon.

Unit-III

[15 Lectures]

Diffraction

Fresnel diffraction: Fresnel's theory of half period zone, diffraction at straight edge, rectilinear propagation.

Fraunhoffer diffraction: Diffraction at a slit, phasor diagram and integral calculus methods. Diffraction at a circular aperture and a circular disc, Rayleigh criterion of

DEVI AHILYA VISHWAVIDYALAYA, INDORE

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FOUR YEAR INTEGRATED COURSE

Class: B.Sc.

Max. Marks: 85 + (CCE) 15 = 100

resolution of images. Resolving power of telescope and microscope. Outline of phase contrast microscopy.

Diffraction Grating: Diffraction at N-parallel slits, Intensity distribution, Plane diffraction grating, Concave grating and its mountings. Resolving power of a grating and comparison with resolving power of prism and of a Fabry Parot etalon.

Unit-IV

[15 Lectures]

Polarisation

Transverse nature of light waves, Polarization of electromagnetic (em) waves, Plane polarised light – production and analysis, Description of Linear, circular and elliptical polarisation.

Propagation of em waves in anisotropic media, uniaxial and biaxial crystals, symmetric nature of dielectric tensor, Double refraction, Hygen's principle, Ordinary and extraordinary refractive indices, Fresnel's formula, light propagation in uniaxial crystal, Nicol prism, Production of circularly and elliptically polarized light, Babinet compensator and applications, Optical rotation, Optical rotation in liquids and its measurement through Polarimeter.

Unit-V

[15 Lectures]

Lasers and Photo Sensors

A brief history of lasers, characteristics of laser light, Einstein prediction, Relationship between Einstein's coefficients (qualitative discussion only), Pumping schemes, Resonators, Ruby laser, He-Ne laser, Applications of lasers, Principle of Holography.

Light Sensors: Photodiodes, Phototransistors, and Photomultipliers.

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B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Max. Marks: 85 + (CCE) 15 = 100

References Books *(for Unit-I to Unit-IV)*:

1. Fundamentals of Optics: F.A. Jenkins and H.E. White, 1976, McGraw-Hill.
2. Principles of Optics: B.K. Mathur, 1995, Gopal Printing.
3. Fundamentals of Optics: H.R. Gulati and D.R. Khanna, 1991, S.Chand Publication.
4. University Physics: F.W. Sears, M.W. Zemansky and H.D. Young, 13/e, 1986. Addison-Wesley.
5. Optics: Ajoy Ghatak, McGraw Hill Publications.
6. Principles of Optics: Max Born and Wolf, Pregmon Press.

References Books *(for Unit-V only)*:

1. An introduction to Lasers – Theory and Applications: M. N. Avadhanalu, S. Chand and Co, Ltd.
2. Solid State Physics: P.K. Palanisamy, Scitech Publications (India) Pvt. Ltd.
3. Principles of Laser : Orazio Svelto, Plenum Press, NewYork
4. Instrument measurement and Analysis: B.C. Narka and K.K. Chaudhary, Tata McGraw Hill Publishing Company 16th reprint Chapter-1.

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Max. Marks: 85 + (CCE) 15 = 100

Semester : **III**
Subject : **Physics**
Title of Paper : **Optics** (प्रकाशिकी)

इकाई–1

[15 Lectures]

ज्यामितीय प्रकाशिकी

परावर्तन और अपवर्तनः फर्मेट का सिद्धांत, गोलाकार सतह पर अपवर्तन, अपलेनेटिक बिन्दु एवं अनुप्रयोग, लैंस सूत्र, पतले लैंसों का संयोजन व समतुल्य फोकस दूरी।

प्रकाशीय उपकरणः विक्षेपण व विक्षेपण क्षमता, वर्ण विपथन व अवर्णक संयोजन। विभिन्न प्रकार के विपथन (गुणात्मक) एवं उनका समाधान, नेंत्रिका में बहुल लैंस निकाय की आवश्यकता। रेम्सडन व हाइगन नेत्रिकाएं।

इकाई–2

[15 Lectures]

प्रकाश का व्यतिकरण

अध्यारोपण का सिद्धांत, द्विस्लिट व्यक्तिकरण, स्त्रोतों की कला संबद्वता की आवश्यकता, प्रकाशीय पथ का मंदन, फ्रिजों का पार्श्विक विस्थापन, रेले का रिफ्रेक्ट्रोमीटर व अन्य अनुप्रयोग, स्थानीकृत फ्रिंजे, पतली फिल्म, दो असमानान्तर परावर्तक सतह से बनी फिल्म से व्यतिकरण, न्यूटन वलय।

हैडिन्जर फ्रिंजे (समान झुकाव की फ्रिंजे), माइकल्सन व्यतिकरणमापी, इसके द्वारा प्रकाश की तरंगदैर्ध्य (λ), दो अत्यंत समीपस्थ तरंगदैर्ध्य का अंतर तथा वर्णक्रम रेखा की चौड़ाई का परिशुद्ध निर्धारण। बहुल पुंज व्यतिकरण में तीव्रता का वितरण, फेब्री पैरो व्यतिकरणमापी एवं इटालॉन।

इकाई–3

[15 Lectures]

विर्वतन

फ्रेनल विर्वतनः फ्रेनल के अर्द्धकालिक कटिबंध का सिद्धांत, सीधी कोर पर विर्वतन, सरलरेखीय गमन।

फ्रानहॉफर विर्वतनः एकल झिरी पर विर्वतन का आरेख एवं समाकलन विधियां, वृत्तीय द्वारक, वृत्तीय चकती पर विवर्तन, प्रतिबिम्बों के विभेदन की रैले की कसौटी। दूरदर्शी व सूक्ष्मदर्शी की विवेदन क्षमता, फेज़ कन्ट्रास्ट सूक्ष्मदर्शी की सामान्य रूपरेखा।

DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Max. Marks: 85 + (CCE) 15 = 100

विवर्तन ग्रेटिंगः N समानान्तर झिर्रियों पर विवर्तन, तीव्रता विवरण, समतल विवर्तन ग्रेटिंग, परावर्तन ग्रेटिंग, अवतल ग्रेटिंग व विभिन्न आरोपण विधियाँ। ग्रेटिंग की विभेदन क्षमता तथा इसकी प्रिज्म व फेब्री पैरो इटलॉन की विभेदन क्षमता से तुलना।

इकाई–4

[15 Lectures]

ध्रुवण

प्रकाश तरंग की अनुप्रस्थ प्रकृति, विद्युत चुम्बकीय तरंग का ध्रुवण, समतल ध्रुवित प्रकाश – उत्पादन व विश्लेषण। रेखिक, वृत्तीय व दीर्घवृत्तीय ध्रुवण का वर्णन।

विद्युत चुम्बकीय तरंग का असंमागी माध्यम में संचरण, एक–अक्षीय व द्वि–अक्षीय क्रिस्टल, परावैद्युत टेन्सर की सममित प्रकृति, द्वि–अपवर्तन, हाइगन का सिद्धांत, साधारण व असाधारण वर्तनांक, फ्रेनल का सूत्र, एक अक्षीय क्रिस्टल में प्रकाश संचरण। निकॉल प्रिज्म, वृत्तीय व दीर्घवृत्तीय प्रकाश का उत्पादन व विश्लेषण, बेबिनेट संकारक व अनुप्रयोग, प्रकाशीय धूर्णन व पोलारीमीटर से इसका मापन।

इकाई–5

[15 Lectures]

लेज़र व फोटो सेन्सर्स

लेज़र का संक्षिप्त इतिहास, लेज़र प्रकाश के अभिलाक्षणिक गुण, आइन्सटीन की संकल्पना, आइन्सटीन गुणांको में सम्बन्ध (गुणात्मक विवेचना), पम्पिंग प्रणालियाँ, रेज़ोनेटर्स, रूबी लेज़र, हीलियम–निआन लेज़र, लेज़र के उपयोग, होलोग्राफी का सिद्धांत।

प्रकाश सेन्सर्सः फोटोडायोड, फोटो ट्रांजिस्टर व फोटो मल्टीप्लायर।

DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Semester : III
Subject : Physics

For Regular Students

Practical	Sessional	Viva	Total
25	10	15	50

For Ex–Student

Practical	Sessional	Viva	Total
35	00	15	50

List of Experiments:

1. Study of interference using biprism.
2. Study of diffraction at straight edge.
3. Use of plane diffraction grating to determine D_1, D_2 lines of Sodium lamp.
4. Resolving power of telescope.
5. Polarization by reflection and verification of Brewster's Law.
6. Study of optical rotation in Sugar solution.
7. Refractive index and dispersive power of prism using spectrometer.
8. Absorption spectrum of material using constant deviation spectrograph.
9. Beam divergence of He-Ne Laser.
10. Determination of wavelength of Laser by diffraction.
11. Determination of radius of curvature of plano-convex lense by Newton's rings.

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class		B.Sc.
Semester		III
Subject	(English)	Chemistry
	हिन्दी	रसायन शास्त्र
Paper		-
Max. Marks		85 + CCE (सतत् सम्यग् मूल्यांकन) 15

Unit		Syllabus	Periods
UNIT I		**A. Arenes and Aromaticity:** Structure of benzene, molecular formula and Kekule structure. Stability and carbon-carbon bond lengths of benzene, resonance structure. MO picture. Aromaticity, the Huckel rule. Aromatic electrophilic substitution, General pattern of the mechanism-Mechanism of nitration, halogenation, sulphonation, mercuration and Friedel-Crafts reaction and energy profile diagram **B. Aryl Halides:** Methods of formation and reactions of aryl halides, Mechanism of nucleophilic aromatic substitution, synthesis and uses of DDT, BHC and Freon.	18 Lectures
		अ. एरीन्स एवं ऐरोमेटिसिटी – बेन्जीन की संरचना अणुसूत्र एवं केकुल संरचना। बेन्जीन का स्थायित्व एवं कार्बन–कार्बन बंध लम्बाई, अनुनाद संरचना आणविक कक्षक चित्र। ऐरोमैटिकता, हकल का नियम, ऐरोमैटिक इलेक्ट्रान स्नेही, प्रतिस्थापन–अभिक्रिया की कियाविधि। नाइट्रीकरण, हैलोजनीकरण, सल्फोनीकरण, मरक्यूरीकरण एवं फ्रीडलक्राफ्ट अभिक्रिया की क्रिया विधि, उर्जा प्रोफाइल चित्र। ब. एरिल हैलाइडस : एरिल हेलाइड के बनाने की विधियाँ एवं उनकी अभिकियांए, नाभिक स्नेही ऐरोमेटिक प्रतिस्थापन की कियाविधि, डीडीटी, बीएचसी एवं फ्रीऑन का संश्लेषण एवं उपयोग।	
		A. Alcohols: Classification and nomenclature. **1. Monohydric alcohols:** nomenclature, methods of formation by reduction of aldehydes, ketones, carboxylic acid, and esters, acidic nature, reactions of alcohols. **2. Dihydric Alcohols:** Nomenclature, methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [$Pb(OAc)_4$ and HIO_4] and pinacol-pinacolone rearrangement. **3.Trihydric alcohols** - nomenclature and methods of formation, chemical reaction of glycerol.	

UNIT II		**B. Phenols:** Nomenclature, structure and methods of formation, acidic character. Comparative acidic strength of alcohols and phenols, stabilization of phenoxide ion by resonance, acylation and carboxylation Mechanisms of Fries rearrangements, Gatterman synthesis, Hauben-Hoesch reaction, Lederer-Manasse reaction and Riemer-Tiemann reaction. अ. अल्कोहल : वर्गीकरण एवं नामकरण। 1. मोनोहाइड्रिक अल्कोहल : नामकरण, ऐल्डिहाइड, कीटोन, कार्बोक्सिलिक अम्ल एवं एस्टरों के अपचयन से बनाने की विधियाँ, अम्लीय प्रकृति एवं अल्कोहल की अभिक्रियायें। 2. डाइहाइड्रिक अल्कोहल : नामकरण, निर्माण विधि, विसिनल ग्लाइकॉल की रासायनिक अभिक्रियायें, ऑक्सीकरण विदलन [$Pb(OAC)_4$ and HIO_4] पिनाकोल एवं पिनाकोलॉन पुनर्विन्यास। 3.ट्राइहाइड्रिक अल्कोहल : नामकरण, ग्लिसरॉल का निर्माण एवं रासायनिक अभिक्रियायें। ब. फीनॉल : नामकरण, संरचना तथा विरचन की विधियाँ, अम्लीय स्वभाव, फीनॉल तथा अल्कोहल की तुलनात्मक अम्लीयता, फिनॉक्साइड आयन का अनुनाद स्थायित्व, ऐसिलीकरण एवं कार्बोक्सिलीकरण, फ्राईस पुनर्विन्यास, गाटरमैन संश्लेषण, हाउबेन–हॉश अभिक्रिया, लैडरर–मानसे अभिक्रिया एवं राइमर–टीमान अभिक्रिया क्रियाविधि सहित।	18 Lectures
UNIT III		**A. Chemistry of elements of I transition series:** Characteristics properties of d-block elements. Properties of the elements of the first transition series, their binary compounds such as carbides, oxides and sulphides. Complexes illustrating relative stability of their oxidation states, coordination number and geometry. **B. Chemistry of elements of II and III transition series:** General characteristics comparative study of **II and III transition series** with 3d-analogues respect to ionic radii, oxidation states, magnetic behavior, spectral properties and stereochemistry. अ. प्रथम संक्रमण श्रेणी के तत्वों का रसायन : d ब्लॉक तत्वों के लाक्षणिक गुण, प्रथम संक्रमण श्रेणी के तत्वों के गुण, द्विअंगी यौगिक जैसे – कार्बाइड, ऑक्साइड एवं सल्फाइड। संकुल यौगिकों के द्वारा ऑक्सीकरण अवस्था का आपेक्षिक स्थायित्व, उपसहसंयोजन अंक एवं ज्यामिति। ब. द्वितीय एवं तृतीय संक्रमण श्रेणी के तत्वों का रसायन : सामान्य गुण, द्वितीय एवं तृतीय संक्रमण श्रेणी के तत्वों के मुख्य गुणों की 3d श्रेणी के तत्वों से तुलना– आयनिक त्रिज्या, ऑक्सीकरण अवस्था, चुम्बकीय व्यवहार, स्पेक्ट्रल गुण एवं त्रिविग रसायन।	18 Lectures

UNIT IV		A. **Coordination Compounds:** IUPAC Nomenclature, Isomerism EAN Concept, Chelates, VBT of transition metal complexes, its limitations. Crystal field theory, Crystal Field Stabilization Energy, spectro chemical series, limitations of CFT. B. **Thermochemistry: Standard state, standard enthalpy of formation:** Hess's Law of heat summation and its application. Heat of reaction at constant pressure and at constant volume. Enthalpy of neutralization. **Second Law of Thermodynamics:** Need for the law, Different statements of the law, Carnot cycle and its efficiency. Carnot theorem. Thermodynamic scale of temperature.	18 Lectures
		अ. उप–सहसंयोजक यौगिक : संकुल यौगिकों का आई.यू.पी.ए.सी. नामकरण, संकुल यौगिकों में समावयवता, प्रभावी परमाणु संख्या अवधारणा, कीलेट यौगिक, संक्रमण धातु संकुलों का संयोजकता बंध सिद्धांत एवं इसकी सीमाऐं। जालक क्षेत्र सिद्धांत, जालक क्षेत्र स्थायित्व ऊर्जा, स्पेक्ट्रो रसायन श्रंखला, जालक क्षेत्र सिद्धांत की सीमाऐं। ब. ऊष्मा रसायन : प्रामाणिक अवस्था, प्रामाणिक सम्भवन की एन्थैल्पी, हेस का ऊष्मा संकलन का नियम एवं इसके अनुप्रयोग, स्थिर आयतन और स्थिर दाब पर अभिक्रिया की ऊष्मा या एन्थैल्पी, उदासीनीकरण की एन्थैल्पी, । ऊष्मागतिकी का द्वितीय नियम : नियम की आवश्यकता, नियम के विभिन्न कथन, कार्नो चक्र, इसकी दक्षता एवं कार्नो प्रमेय, तापमान का ऊष्मागतिकी पैमाना ।	
UNIT V		A. **Thermodynamics : Concept of entropy:** entropy as a state function, entropy as a function of P & T, entropy change in physical change, Clausius inequality, entropy as criteria of spontaneity and equilibrium. Entropy change in ideal gases and mixing of gases. B. **Third Law of Thermodynamics:** Nernst heat theorem, statement and concept of residual entropy, evaluation of absolute entropy from heat capacity data, Gibbs and Helmholtz functions, Gibbs function (G) and Helmholtz function (A) as a thermodynamic quantities, A and G as a criteria for thermodynamic equilibrium and spontaneity, their advantage over entropy change, relative variation of G & A with P, V & T. C. **Buffers:** Mechanism of buffer action, Henderson-Hazel equation, Hydrolysis of salts.	18 Lectures
		अ. ऊष्मागतिकी : एण्ट्रॉपी की अवधारणा : एण्ट्रॉपी–अवस्था फलन के रूप में, एण्ट्रॉपी T तथा P के अवस्था फलन के रूप में; भौतिक परिवर्तन में एण्ट्रॉपी परिवर्तन, क्लॉसियस असमता, एण्ट्रॉपी ऊष्मागतिक साम्य और स्वतः प्रवर्तिता की कसौटी के रूप में आदर्श गैसों में एण्ट्रॉपी परिवर्तन एवं गैसों को मिलाने की एण्ट्रॉपी।	

		ब. ऊष्मागतिकी का तृतीय नियम : नर्नस्ट ऊष्मा प्रमेय कथन तथा अवशिष्ट एण्ट्रॉपी की अवधारणा, ऊष्माधारिता आँकड़ों से भरण एण्ट्रॉपी का निर्धारण या परिकलन, गिब्बज् तथा हेल्महोल्ट्स फलन, गिब्बज् फलन (G) तथा (A) हेल्महोल्ट्ज फलन, फलन ऊष्मागतिक राशियों के रूप में, A तथा G ऊष्मागतिक साम्य और स्वतः प्रवर्तिता की कसौटी के रूप में, एण्ट्रॉपी परिवर्तन की तुलना में इनके लाभ, G एवं A का P, V एवं T के सापेक्ष परिवर्तन। स. बफर्स : बफर क्रिया की क्रियाविधि, हेण्डरसन–हेजल समीकरण, लवणों का जल अपघटन।	

DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Recommended Books	1. Physical Chemistry-Puri, Sharma and Pathania, Vikas Publications, New Delhi 2. Physical Chemistry - G.M. Barrow, International Student Edition, McGraw Hill. 3. The Elements of Physical Chemistry, P.W. Atkins, Oxford University Press 4. Physical Chemistry, R.A. Alberty, Wiley Eastern Ltd. 5. Physical Chemistry Through problems, S.K. Dogra and S. Dogra, Wiley Eastern 6. Organic Chemistry, Morrison and Boyd, Prentice Hall. 7. Organic Chemistry, L.G. Wade Jr. Prentice Hall 8. Fundamentals of Organic Chemistry Solomons, John Wiley. 9. Organic Chemistry, Vol. I, IL IIL S.M. Mukherji, S.P. Singh and R.P. Kapoor, 10. Organic Chemistry, F.A. Carey, McGraw-Hill Inc. 11. Introduction to Organic Chemistry, Streitwiesser, Heathcock and Kosover, Macmillan. 12. Vogel's Qualitative & quantitative Analysis Vol- 1, 2, 3, ELBS. 13. Advanced Organic chemistry, I. L. Finar, ELBS. 14. Basic Concepts of Analytical chemistry, S M Khopker, New Age International Publishers. 15. Analytical Chemistry, R.M. Verma, CBS Publication. 16. Analytical Chemistry, Skoog & West, Wiley International. 17. Essentials of Physical Chemistry, B.S. Bahl, Arun Bahl & G.D. Tuli, S. Chand & Company Ltd. 18. Atomic structure and Molecular spectroscopy, Manas Chanda, New Age International Publishers. 19. Molecular Spectroscopy, Sukumar, MJP Publishers. 20. Organic Chemistry, Mac Murrey, Pearson Education. 21. Inorganic Chemistry – J.D. Lee, John Wiley 22. Inorganic Chemistry – Cotton and Wilkinson, John Wiley 23. Inorganic Chemistry – Huheey, Harper Collins Pub. USA 24. Inorganic Polymer – G.R. Chhatwal, Himalaya Pub.House 25. मध्य प्रदेश हिन्दी ग्रन्थ अकादमी भोपाल द्वारा प्रकाशित रसायन विज्ञान की पाठ्यपुस्तक। 26. मध्य प्रदेश हिन्दी ग्रन्थ अकादमी भोपाल द्वारा प्रकाशित प्रायोगिक रसायन की पाठ्यपुस्तक।

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class / कक्षा	: B. Sc. B.Ed
Semester / सेमेस्टर	: III Semester
Subject / विषय	: Botany
Title of Subject Group	: STRUCTURE, DEVELOPMENT & REPRODUCTION IN FLOWERING PLANTS
विषय समूह का शीर्षक	: पुष्पीय पौधों की संरचना, विकास एवं प्रजनन
Max. Marks अधिकतम अंक	: ~~85+15 CCE~~ =100 75 +25= 100

Particulars / विवरण

UNIT – I	The Root system: Root apical meristem. Differentiation of primary and secondary tissues and their role. Anatomy of Monocot and Dicot root. Secondary growth in root. Morphological modification of root for storage, respiration and reproduction. Interaction of root with microbes. जड़ तंत्र : जड़ का शीर्ष विभज्योतक, प्राथमिक एवं द्वितीयक ऊतकों का विभेदन एवं उनके कार्य, एकबीजपत्री एवं द्विबीजपत्री जड़ की आन्तरिक संरचना, जड़ मे द्वितीयक वृद्धि के आकारिकीय रूपान्तरण : संचयन, श्वसन एवं प्रजनन। सूक्ष्मजीवों के साथ जड़ की पारस्परिक क्रिया।
UNIT – II	The Shoot system: Shoot apical meristem and histological organization, Anatomy of Monocot and Dicot Stem : Vascular cambium and its functions, Secondary growth in stem: Characteristics of growth rings: Sapwood and Heart wood, Secondary Phloem, Cork Cambium and Periderm. प्ररोह तंत्र : प्ररोह शीर्षस्थ विभज्योतक एवं ऊतकीय संगठन, एकबीजपत्री एवं द्विबीजपत्री के तने की आन्तरिक संरचना, – संवहन एधा एवं उसके कार्य तने में द्वितीयक वृद्धि: वलय की विशेषताएं, : रसदारू एवं कठोरदारू द्वितीयक फ्लोएम, कार्क कैम्बियम एवं परिचर्म।
UNIT – III	The Leaf system: Origin and Development of leaf. Diversity in size, shape and arrangement. Internal structure of Dicot and Monocot leaf. Adaptations to photosynthesis and water stress, Senescence and abscission. पत्ती तंत्र : उत्पत्ति एवं विकास, प्रमाप, आकार एवं विन्यास में विविधताएं, एकबीजपत्री एवं द्विबीजपत्री पर्ण की आंतरिक संरचना, प्रकाश संश्लेषण एवं जलीय प्रतिबल का अनुकूलन, जीर्णता एवं विलगन।

UNIT – IV	**Embryology:** Concept of flower as a modified shoot. Structure of Anther, Microsporogenesis and Male Gametophyte. Structure of Pistil, Ovules, Megasporogenesis and Development of Female Gametophyte (Embryo Sac) and its types. Pollination – Mechanism and Agencies of Pollination, Pollen Pistil interactions and Self incompatibility. भ्रूणिकी : पुष्प एक रूपांतरित प्ररोह की अवधारणा। परागकोष की संरचना, लघुबीजाणुजनन एवं नर युग्मकोद्भिद्। स्त्रीकेसर की संरचना, बीजाण्ड, गुरुबीजाणुजनन, मादा युग्मकोद्भिद का विकास (भ्रूण कोष) एवं प्रकार। परागण – परागण की प्रक्रिया एवं एजेन्सी, पराग स्त्रीकेसर की पारस्परिक क्रिया एवं स्व अनिषेच्यता।
UNIT – V	**Embryology:** Double Fertilization and triple fusion. Development and types of endosperm and its morphological nature, Development of Embryo in Monocot and Dicot. Fruit development and maturation. Seed structure and dispersal. Mode of Vegetative Propagation. भ्रूणिंकी : द्विनिषेचन एवं त्रिसंयोजन। भ्रूणपोष का विकास, प्रकार एवं इसकी आकारिकीय प्रकृति। एकबीजपत्रीय और द्विबीजपत्रीय भ्रूण का विकास। फल का परिवर्धन एवं परिपक्वता, बीज की संरचना एवं प्रकीर्णन। कायिक प्रवर्धन के प्रकार।

SUGGESTED READINGS:-

- Gangulee, H.C., Das, K. S. And Dutta, C. 2007. College Botany Voll.I, New Central Book Agency (P) Ltd. Kolkata, 7000
- Hywood, V.H. & Moore, D.M. (eds) 1984. Current concepts in plant taxonomy. Acedemic press London.
- Jones, S.B. Jr. and Luchsinger, A.E. 1986, Plant taxonomy (III edition) Mc Graw Hill Book Co. New York.
- Maheshwari, P.1978. Plant Embryology.

  Pandey, B. P. 2010. A Text book of Botany- Angiosperms, S. Chand & Company Ltd. Ramnagar, New Delhi- 110055.

- Radford, A.E. 1986. Fundamentals of Plant Systematics, Harper and Row, New York.
- Shrivastava and Das. Modern text book of Botany Vol-III & IV.
- Singh, V., Pande P.C. and Jain , D. K. Structure & Development in Angiosperms. Rastogi Publication, Meerut.

Practical

Objectives

To provide knowledge about structure, development and reproduction in flowering plants.

i) To provide skills of section cutting of angiosperms.
ii) To provide field experiences for studying sources of fire woods, timber yielding and medicinal plants.
iii) To familiarize the students with morphology and anatomy of flowers.
iv) To provide the knowledge of sexual reproduction.

Scheme of Practical Examination Semester III

Time: 4 hrs Marks: 50

1- Exercise based on anatomy of root/stem.	10	
2- Exercise based on anatomy of leaf.		10
3- Study of shoot apex/root apex/Ovules and Anthers		5
4-Spotting- (1-5)		10
5-Viva- voce		5
6-Sessional		10
Total		50

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Syllabus for Degree (B.Sc.) course
Subject - BOTANY
Year- 2014 Onwards

Semester	Title of Paper	Maximum Marks	Year
B.Sc I	Diversity of Microbes and Cryptogams	85+15= 100	2014-15
B.Sc II	Diversity & Systematics of Seed Plants (Phanerogames)	85+15= 100	2014-15
B.Sc III	Structure, Development & Reproduction in Flowering Plants	85+15= 100	2015-16
B.Sc IV	Plant Ecology, Biodiversity and Phytogeography	85+15= 100	2015-16
B.Sc V	Plant Physiology and Biochemistry	85+15= 100	2016-17
B.Sc VI*	Cell Biology,Genetics and Biotechnology	85+15= 100	2016-17

* Job oriented Project/Internship will be carried out in VI Semester for 60 hrs as per policy of Department of Higher Education.

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DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class / कक्षा	B.Sc.
Semester / सेमेस्टर	III
Subject / विषय	Zoology (प्राणिशास्त्र)
Title of Paper	Cell biology and Developmental Biology
Max. Marks	85

Unit-I	1. History of Cell Biology. 2. Cell Theory , Prokaryotic and eukaryotic Cells. 3. Microscopy : Principle and application of Compound microscope & Electron microscope. 4. Structure and transport across the plasma membrane. 5. Extra nuclear organization of cell.
Unit-II	1. Nuclear organization of cell. 2. Nucleo cytoplasmic interactions. 3. Amitosis , mitosis and meosis. 4. Cell death : Necrosis and Apoptosis.
Unit-III	1. Spermatogenesis 2. Oogenesis 3. Fertilization 4. Parthenogenesis 5. Patterns of cleavage.
Unit-IV	1. Frog and Chick embryology upto the formation of three germinal layers. 2. Fate map construction in frog and chick. 3. Gastrulation in Frog and chick up to the formation of germinal layers.
Unit-V	1. Concept of competence 2. Determination and differentiation 3. Extra embryonic membranes in chick 4. Concept of regeneration 5. Stem cells..

DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Class / कक्षा
Semester / सेमेस्टर III
Subject / विषय

B.Sc.
Practical
Zoology (प्राणिशास्त्र)

1. Study of type of cells through histological preparations
2. Study of embryological slides
3. Study of embryo through window preparation in fertilized bird egg
4. Smear/ squash preparation techniques
5. Study of mitosis, meiosis, oogenesis, spermatogenesis

Distribution of Marks

Time 3 hours
Marks: 50

	Maximum Marks Allotted
1. Spotting (5 spots)	10
2. Squash preparation/ smear preparation	05
3. Identification of embryological stages (2 slides)/ window preparation	07
4. Identification of stage in cell division	05
5. Microtomy techniques/ double or single staining	08
6. Viva	10
7. Record	05
Total	50

DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Name of the Paper	Theory (M.M.)	Minimum Passing Marks in Theory	~~C.C.E.~~ ~~(M.M.)~~ Internal	Minimum ~~Passing Marks in~~ C.C.E	Practical MM	Minimum Passing Marks	Total
Real Analysis, Differential Equation, Abstract Algebra	125 ~~150~~	~~42~~ 50	25	8	---	---	150

Note: There will be three sections in the question paper. All questions from each section will be compulsory.

Section –A (20 marks.) will contain 10 objective type questions, two from each unit, with the weightage of 2 marks.

Section –B (35 marks.) will contain 5 short answer type questions (each having internal choice), one from each unit having 7 marks.

Section –C (70 marks.) will contain 5 long answer type questions (each having internal choice), one from each unit, having 14 marks.

There should be 12 teaching periods per week for Mathematics like other Science Subject

(6 Period Theory + 6 Period Practical)

DEVI AHILYA VISHWAVIDYALAYA, INDORE

B.Sc.B.Ed.

FOUR YEAR INTEGRATED COURSE

Max Marks /	अधिकतम अंक	: 125
Class/ कक्षा		: B.Sc. /B.A.
Semester/सेमेस्टर		: III
Subject / विषय		: Mathematics
Title / शीर्षक		: Real Analysis, Differential Equation, Abstract Algebra

: Particulars/ विवरण :

Unit-I	Definition of a sequence, Theorems on limits of sequences, Bounded and monotonic sequences, Cauchy's convergence criterion, Series of non-negative terms, Comparison test, Cauchy's integral test, Ratio test, Raabe's test, logarithmic test, Leibnitz's theorem, Absolute and conditional convergence.
इकाई–1	अनुक्रम की परिभाषा, अनुक्रमों की सीमाओं पर प्रमेय, परिबद्ध एवं एकदिष्ट अनुक्रम, कॉशी के अभिसरण का मापदंड, अऋणात्मक पदों की श्रेणी, तुलना परीक्षण, कॉशी का समाकल परीक्षण, अनुपात परीक्षण, रॉबी का परीक्षण, लघुगणकीय परीक्षण, लिबनीज का प्रमेय, निरपेक्ष एवं सापेक्ष अभिसरण ।
Unit-2	Series Solution of Differential Equations-Power series Method, Bessel's Equation ,Bessel's function and its properties, recurrence and generating relations, Legendre's Equation, Legendre's function and its properties, recurrence and generating relations.
इकाई–2	अवकल समीकरणों की श्रेणी हल, घात–श्रेणी विधि, बेसल का समीकरण, बेसल का फलन एवं उसके गुणधर्म, पुनरागमन एवं जनक संबंध, लीजेन्ड्र का समीकरण,

	लीजेन्डर का फलन एवं उसके गुणधर्म, पुनरागमन एवं जनक संबंध।
Unit-3	Laplace transformations, Linearity of the Laplace transformation, Existence theorem of Laplace transforms, Laplace transforms of derivatives and integrals, Shifting theorem, Differentiation and integration of transforms, Inverse Laplace transforms, Convolution theorem, Applications of Laplace transformation in solving linear differential equations with constant coefficients.
इकाई–3	लाप्लास रूपांतरण, लाप्लास रूपांतरणों की लांबिकता, लाप्लास रूपांतरणों का अस्तित्व प्रमेय, अवकलों एवं समाकलों के लाप्लास रूपांतरण, स्थानांतरण प्रमेय, रूपांतरणों का अवकलन एवं समाकलन, प्रतिलोम लाप्लास रूपांतरण, संवलन प्रमेय, अचर गुणांकों वाले रैखिक अवकल समीकरणों को हल करने में लाप्लास रूपांतरणों के अनुप्रयोग।
Unit-4	Definition and basic properties of group, Order of an element of a group, Subgroups, Algebra of subgroups, Cyclic groups and their simple properties, Coset decomposition and related theorems, Lagrange's theorem and its consequences.
इकाई–4	समूह की परिभाषा एवं मूलभूत गुणधर्म, समूह के अवयव की कोटि, उपसमूह, उपसमूहों का बीजगणित। चक्रीय समूह एवं उनके साधारण गुणधर्म, सह समुच्चय विभाजन एवं संबंधित प्रमेय, लेग्रांजे प्रमेय एवं उसके निगमन ।
Unit-5	Normal sub group, Quotient groups, homomorphism and isomorphism of groups, Kernel of homomorphism of groups, fundamental theorem of homomorphism of groups, Permutation groups (even and odd permutations), Alternating groups A_n, Cayley's theorem.
इकाई–5	प्रसामान्य उपसमूह, विभाग समूह, समूहों की समकारिता एवं तुल्यकारिता, समकारिता की अष्टि, समूहो की समकारिता का मूलभूत प्रमेय, क्रमचय समूह (सम एवं विषम क्रमचय) एकांतर समूह A_n, कैली का प्रमेय ।

Text Books :

1. R.R. Goldberg, Real Analysis, I.B.H. Publishing Co. New Delhi, 1970.
2. Gorakh Prasad, Integral Calculus, Pothishala Pvt. Ltd. Allahabad.
3. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & sons, 1999.
4. I. N. Herstein – Topics in Algebra, Wiley Eastern Ltd. New Delhi 1977.
5. Sharma and Gupta-Integral Transform, Pragati Prakashan Meerut
6. म.प्र हिन्दी ग्रंथ अकादमी की पुस्तकें ।

Reference Books:

1. T.M. Apostol Mathematical Analysis Narosa Publishing House New Delhi 1985.
2. Murray R.Spiegel, Theory and Problems of Advanced Calculus, Schaum Publishing Co. New York.
3. N. Piskunov, Differential and Integral Calculus, Peace Publishers, Moscow.
4. S.C. Malik, Mathematical Analysis, Wiley Eastern Ltd. New Delhi.
5. P.B. Bhattacharya, S.K. Jain and S.R. Nagpaul, Basic Abstract Algebra, Wiley Eastern, New Delhi, 1997.
6. I. S. Luther and I.B. S. Passi, Alegebra Vol- I , II. Narosa Publishing House.

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CC5: GENDER, SCHOOL AND SOCIETY

Course Objectives:

To enable the Student Teacher to:

1. To acquaint the student teachers with the concept of gendered roles in society and their challenges.
2. To develop an understanding of the inequality and disparities in equal opportunities in education in societal context.
3. To enable the student teachers to critically examine the stereotypes and rethink their beliefs.
4. To help student teachers to develop abilities to handle notion of gender and sexuality.

Course Contents:

UNIT - I : Gender Issues: Key Concepts

1. The meaning and concept of gender and experience of gender in across different social groups, regions and time-periods. Challenges in gendered roles in society: Family, caste, religion, culture, the media and popular culture (films, advertisements, songs etc.), law and the state.
2. Unequal access of education to girls; access to schools; gender identity construction at home and in society.
3. Indian societal context: Power and authority in Indian Social System (patriarchy). Socialization of child into a specific gender influences, and opportunities for education.

UNIT - II : Gender Challenges and Education

4. Challenging gender inequalities or reinforcing gender parity: The role of schools, peers, teachers, curriculum and textbooks, etc.
5. Representation of gendered roles, relationships and ideas in textbooks and curricula.
6. Schools nurture or challenge creation of young people as masculine and feminine selves.

UNIT - III : Gender Issues and Role of Teacher

7. Counseling and Guidance: Teachers' need help to develop abilities to handle notions of gender and sexuality. (often addressing the issues under diverse cultural constraints, their own and their students', instead of shying away from the same.)

8. Sex Education: Perceptions of safety at school, home and beyond (The formulation of positive notions of sexuality among young people impact larger issues).

9. Identification of sexual abuse/violence and its verbalisation, (combating the dominant societal outlook of objectification of the female body, and so on.)

UNIT - IV : Role of the Media and Life Skills Education

10. Role of the media in propagation of popular beliefs, reinforcing gender roles in the popular culture and by implication, at school.

11. Life Skills courses in school: provisions to deal with some issues of gender identity roles and performativity for the development of positive notions of body and self.

12. Gender equality Education: of regions and exploring the roles of the institutions (family, caste, religion, culture, media and popular culture, law and the state).

Assignment:

1. Group Discussion: B.Ed. students will observe and study the distribution of roles and responsibilities in schools and classrooms, rituals and school routines, processes of disciplining distinctly as for girls and boys, and in classroom interaction. Studying the everyday activities where the majority of girls constitute the assembly choir group and the boys form the inter-school cricket team; girls partnered to be seated with other girl students and boys with boys; sciences associated with boys and humanities with girls; art and craft considered to be the domain of the girls and physical education that of the boys; etc. Teachers need to question such stereotypes and help students rethink their beliefs. Why these issues are delineated only for supplementary extra-curricular periods in school and not integrated into subjects of study need to be discussed.
2. Group work& activities, brainstorming, audio-visual presentations: prospective teachers to attend and themselves undertake sessions of open verbalization with school students, voluntary cum friendly involvement in discussions, , together with the co-participation of school (teachers, counselors and other resources), home (parents and siblings) and society (NGOs, other expert groups, etc.).
3. Assignments and Projects: Student-teachers will be exposed and trained to prepare pedagogic material and practice a pedagogy which can develop abilities and confidence in their students to critically evaluate and challenge gender inequalities, while being sensitive to social groups and

EPC 1

EPC I : READING AND REFLECTING ON TEXTS

Objectives

- To enable the students to read and response to a Varity of text in different ways
- To develop Meta cognitive awareness
- To enhance the capacities as readers and writers by becoming participants in the process of reading
- To enable the student teachers to work on the field and make predictions and check their predictions and then to summarize.

Unit - I : Reading Skills

- Creating environment for reading – reading clubs, class libraries
- Reading aloud and silent reading
- Scaffolding: concept and activities
- Reading different texts types like stories, poems, riddles, jokes, and instructions for games

Unit - II : Reading with comprehension

- Reading for global and local comprehension
- Inferences, analysis and extrapolation
- Reading strategies including word-attack strategies
- Discourse analysis
- Using reading as a tool for reference skills i.e. use of dictionary, encyclopaedia and internet
- Using ideas of critical literacy to analyse chapters from textbooks .
- Acquisition of Reading Skills

Unit - III : Types of text

- Narrative text
- Expository
- Autobiographical Narratives
- Field Notes

- Ethnographies
- Addressing different types of skills and strategies

Mode of Transaction

- Participating in tasks and activities to improve proficiency in the receptive and productive skills of English.
- Text analysis of school textbooks to improve skills in critical literacy.
- Reflecting on one"s own learning to make connections with pedagogy.

Essential Readings

1. Lightbown, P. M & Spada, N. (1999). How Languages are Learned Oxford: Oxford University Press
2. Maley, A. & Duff, A. (1991). Drama techniques in language learning: A resource book of communication activities for language teachers (2nd ed.). Cambridge: Cambridge University Press.
3. Morgan, J. & Rinvolucri, M. (1983). Once upon a time: Using stories in the language classroom. Cambridge:. Cambridge University Press.
4. Wright, A. (1989). Pictures for Language Learning. Cambridge: Cambridge University Press.

Advanced Readings

1. Parrot M. (1993). Tasks for language teachers Cambridge: Cambridge University Press
2. Richards, J. & Lockhart, C. (1994). Reflective Teaching in Second Language Classrooms. Cambridge: Cambridge University Press
3. Slatterly, M. & Willis, J. (2001). English for primary teachers: A handbook of activities & classroom language. Oxford: Oxford University Press