
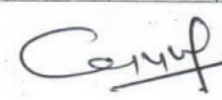
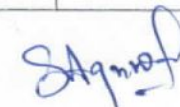




PT. RAVISHANKAR SHUKLA UNIVERSITY RAIPUR (C.G.)

B.Ed. SYLLABUS 2019-21

Paper No	PAPER NAME	EXTERNAL	INTERNAL
			THEORY/PRACTICAL
SEMESTER I			
	THEORY		
Paper 1	Philosophical Perspectives of Education	80	20
Paper 2	Nai Talim: An Experiential Learning	80	20
Paper 3	Pedagogy Part I	80	20
	PRACTICUM		
	Preparation of Teaching Aids 01. Minimum 6 charts on school contain 02. Minimum 5 sets of Transparency to Transact school content 03. Minimum 2 Power Point Presentations to transact school content 04. Minimum one static model to aid school teaching content		50
	Community Activities 1. Village Survey 2. Awareness Rally/Program		50
SEMESTER II			
	THEORY		
Paper 4	Sociological Perspectives of Education	80	20
Paper 5	Learner and Learning Process	80	20
Paper 6	Elective I	80	20
Paper 7	Curriculum and Knowledge	80	20
	PRACTICUM		
	Micro Teaching on Skills of Teaching Internship (Two weeks) School Experience a) Observation of School Documents b) Mentor's Report		50
SEMESTER III			
	THEORY		
Paper 8	Pedagogy Part II	80	20
Paper 9	Nai Talim: Skill Based Learning	80	20
	PRACTICUM		
	Internship (Eighteen Weeks)		100
	Reflective Diary & Supervisor's Assessment		50
SEMESTER IV			
	THEORY		
Paper 10	Gender, School and Society	80	20
Paper 11	Assessment in Learning	80	20
Paper 12	Elective II	80	20
	PRACTICUM		
	Training in Yoga and Sports & Games		50
	Psycho-Metric Assessment	50	
	Viva Voce on Teaching Experience	100	
	TOTAL	1110	240 + 350 = 590
	GRAND TOTAL	1700	

Curriculum Framework

B.ED. TWO YEAR COURSE 2019-2021.

Curriculum Organization based on NCTE framework			
Semester I	Semester II	Semester III	Semester IV
THEORY	THEORY	THEORY	THEORY
(C) Philosophical perspectives of Education (4 credits)	(C) Sociological perspectives of Education (4 credits)	(S) Pedagogy II (4 credits)	(C S) Gender, School & Society (4 credits)
(C) Nai Talim: An Experiential Learning (4 credits)	(C) Learner & Learning Process (4 credits)	(T E) Nai Talim: Skill Based Learning (2 credits)	(T E) Assessment in Learning (4 credits)
	(E) Elective I (4 credits)		(E) Elective II (4 credits)
(S) Pedagogy I (4 credits)	(T E) Curriculum & Knowledge (2 credits)		
PRACTICUM	PRACTICUM	PRACTICUM	PRACTICUM
Preparation of Teaching Aids (2 credits) Community Activities (2 credits)	Internship (2 Weeks) (2 credits) School Experience I (2 credits) a) Observation report of school documents b) Mentor's Report. c) Micro Teaching	Internship (18 Weeks) (12 credits) Reflective Diary (2 credits) Supervisor's Assessment (2 credits)	Training in Yoga and Sports (2 Credits) Psycho-Metric Assessment (2 credits) Teaching Exam & Viva Voce on Teaching
12 + 4 = 16 Credits	14 + 4 = 18 Credits	6 + 16 = 22 Credits	12 + 4 = 18 Credits
C: Core Paper, E: Elective Paper, TE: Teacher Enrichment, CS: Contemporary Study			

PSYCHOLOGY PRACTICALS

At least 5 practical's have to be conducted. Out of which 2 is compulsory.

01. Aptitude Test in any school subject (Compulsory)
02. Case Study to measure the problematic behavior of the child (Compulsory)
03. Achievement Test in any school subject with findings difficulty level only
04. Value Test
05. Reasoning Ability Test
06. Testing Individual differences/ Intelligence Test
07. Transfer of Learning
08. Span Of Attention

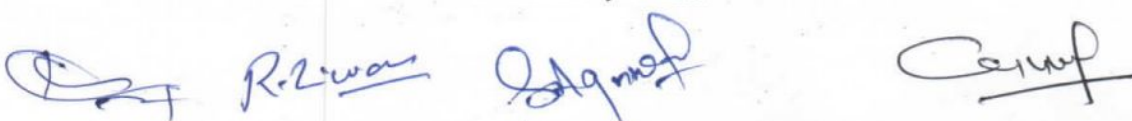
Note: "Subject" is compulsory to be present with the trainee during the annual Psychometric Practical Examination.

TEACHING PRACTICALS

During Annual Teaching Viva voce Practical Exam it is compulsory to produce all teaching related work from Semester I to III.

18 Lesson plan (9 each from Middle and High School) including 08 lesson plan is compulsory from the Nai Talim formate). (10 Lesson Plan+8 Nai Talim=18)

Note: Formate has been given at the end of the syllabus.



B.ED. SYLLABUS (SEMESTER I)

PAPER - I

PHILOSOPHICAL PERSPECTIVE OF EDUCATION

MARKS 80

Aims of the Course:

To enable the student- teacher to understand

1. The relationship between Philosophy and Education and implications of philosophy on education.
2. The importance and role of education in the progress of Indian society.
3. The contribution of great educators to the field of education.
4. The need to study education in a sociological perspective. The process of social change and socialization to promote the development of a sense of commitment to the teaching profession and social welfare.
5. Their role in creation of a new social order in the country and learn about various social welfare opportunities in which they can participate helpfully.
6. The means and measures towards the promotion of National integration and protection of human rights.

Course Outline:

UNIT-I: AIMS OF EDUCATION

- Education Nature and Meaning its objectives/ aims in relation to the time and place.
- Educational aims in the Western context: with specific reference to Russell, Dewey. Their impact on educational thought and class room practices, in term of progressive trends in education.
- Educational aims in the Indian context with specific reference to Indian thinkers such as Gandhi, Tagore.
- Philosophy and Education: Significance of studying philosophy in understanding educational practices and problem.

UNIT – II: PHILOSOPHICAL SYSTEMS

Major Philosophical systems - their salient features and their impact on education.

- Realism with reference to Aristotle and Jainism.
- Naturalism with reference to the view! of Rousseau and Rabindra Nath Tagore.
- Idealism with reference to Plato. Socrates and Advaita Philosophy.
- Pragmatism with reference to Dewey “instrumentalism & Experimentalism”

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- Humanism: Historical, Scientific and Buddhists.

UNIT-III : INDIAN THINKERS

- Educational thinkers and their contribution in developing principles of education.
- M.K. Gandhi Basic tenets of Basic education.
- Gijju Bhai The world of the child.
- Swami Vivekananda : Man making education.
- Sri Aurobindo Integral education, its basic premises; stages of development.
- J. Krishna Murthy; Child Centered Education.

UNIT – IV: WESTERN THINKERS

- JJ Rousseau
- John Dewey
- Antonio Gramsci (Neo- Gramscian Theory)
- Paulo Friere (Democratic Education)


UNIT – V: CONTEMPORARY THOUGHT

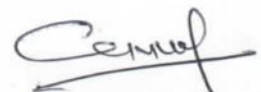
- Critical and comparative study of the period and socio- political perspective of the western and Indian Thinkers.
- Contemporary philosophical perspectives of Education; Modernization, globalization in thought and education

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 R. L. Wani

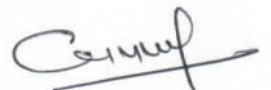
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PAPER II**NAI TALIM: AN EXPERIENTIAL LEARNING****MARKS 80****Aims of the Course:****To enable the student-teacher to understand**

1. Understand the concept of local community engagement in teacher education
2. Understand the context of the child from various backgrounds & occupations.
3. Know the school education programs and policies which have local community engagement aspects.
4. Learn the process of connecting the text with the Child/learner within the local Context
5. Distinguish traditional from constructivist approaches of local community engagement
6. Train in usage of dialogic method of community engagement
7. Train in usage of organic intellectual approach for local community engagement
8. Experiential learning of best practices in community engagement
9. Participate effectively in the local community service
10. Develop insights and field realities on indignity and indigenous models.
11. Understand and practice models of Tagore, Gandhi, Shyama Prasad Mukkherji for rural reconstruction
12. Explore models of art, craft for entrepreneurship for self-reliance.
13. Understand various real, community stories of children, families.
14. Discover latent talents in the traditional occupations to promote them
15. Devise contextually suitable engagement activities.
16. Promote local occupations with literacy, technology integration and research to develop entrepreneurs

Unit I: Nai Talim- An Introduction

- Introduction of Nai Talim and its significance in Indian context, historical perspectives.
- Concept, Aims, Objectives and Scope of Nai-Talim
- Main Principles of Basic Education
- Nai Talim in NCF-2005, NCFTE-2010, RTE-2009 and its Educational Implication

Unit II: Social and Philosophical Perspectives of Nai Talim

- Gandhian thoughts and Philosophy
- Gandhian Philosophy and Aims of Education
- Models of Education, Approach to Learning- Constructivism, Paulo Freire Critical Pedagogy and Dialog Method
- Course outline at Primary, Middle and Secondary Level

Unit III: Work Based Learning and Community Involvement

- Principle of Community Involvement
- Nai Talim and Craft Education
- Nai Talim and Moral Education
- Agencies of School & Society
- Self Help Groups

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Unit IV: Planning and Organization of Skill Development

- Methods of Skill Development
- Establishment of Experimental Education and Rural Education
- Connecting Knowledge to life outside the School.
- Execution of digitalization
- Importance of Renewable Energy

Unit V: Health & Hygiene

- Nutrition - Balance Diet
- Communicable and non communicable Disease & its Prevention
- First Aid
- Personal & Community Hygiene

Practicum

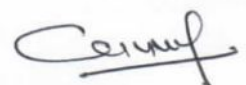
- Panel discussion
- Group Project
- Village Involvement - Gram Sabha, Panchayat
- Interaction with different cottage industry workers
- Craft work and exhibition for social work

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PEDAGOGY (Part I)

SEMESTER - I

PAPER-III

PEDAGOGY TEACHING OF HINDI

(हिंदी भाषा शिक्षण)

MARKS 80

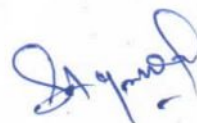
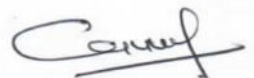
एक परिचय

राष्ट्रीय पाठ्यचर्या की रूपरेखा 2005 अमयापकों की भूमिका में एक बड़ी तब्दीली की मांग करती है। पाठ्यचर्या में अब तक अमयापकों को ही ज्ञान के स्रोत के रूप में केन्द्रीय स्थान मिलता रहा है, वह सीखने-सिखाने की समूची प्रक्रिया के संरक्षक और प्रबंधक के रूप में मुख्य भूमिका निभाने का काम करते आए हैं। पर 2005 की स्कूली पाठ्यचर्या उनसे मांग करती है कि वे सूचनाओं के वितरक और ज्ञान के स्रोत बन कर न रहें बल्कि विद्यार्थियों द्वारा ज्ञान हासिल करने की प्रक्रिया में स्वयं को सहायक मानें। वे विद्यार्थियों को शिक्षा-प्रक्रिया में सक्रिय भागीदार के रूप में देखें और उनके सवालों को सुनने और समझने की जरूरतों को समझें। इन सब तब्दीलियों को उनके व्यवहार का हिस्सा बनाने के लिए जरूरी है कि अध्यापक शिक्षा के पाठ्यक्रम में बदलाव आए। स्कूली व्यवस्था में बदलाव की पहल तभी संभव है जब इस व्यवस्था से जुड़े लोगों के दृष्टिकोण में परिवर्तन आए और अध्यापक की भूमिका इस व्यवस्था में सबसे महत्वपूर्ण है। इस दृष्टि से भाषा-शिक्षण का पाठ्यक्रम और भी महत्वपूर्ण हो जाता है क्योंकि भाषा पूरी शिक्षा की जमीन तैयार करती है जहां सिर्फ भाषा पढ़ना सीखना नहीं बल्कि भाषा के जरिये और विषयों में भी निपुणता हासिल करने की बात आती है। इसके साथ ही भाषा से जुड़े नए मुद्दे जैसे बहुभाषिक कक्षा, समझ का माध्यम, शांति की शिक्षा में भाषा की भूमिका आदि की समझ अध्यापकों के लिए जरूरी है जो अध्यापक शिक्षा में व्यापक बदलाव की मांग करते हैं। यह पाठ्यक्रम भाषा के नए सरोकारों और सीखने-सिखाने की नई दृष्टियों को म्यान में रखकर तैयार किया गया है। हमें आशा है कि प्रशिक्षु अध्यापकों को इससे भाषा-शिक्षण की तैयारी में सहायता मिलेगी।

हिंदी भाषा-शिक्षण का पाठ्यक्रम

पाठ्यक्रम के विशेष उद्देश्य

- भाषा के अलग-अलग भूमिकाओं को जानना
- भाषा सीखने की सृजनात्मक प्रवृत्ति को जानना
- भाषा के स्वरूप और व्यवस्था को समझना
- स्कूल की भाषा, बच्चों की भाषा और समझ के बीच के संबंध को जानना
- भाषा के संदर्भ में पढ़ने के अधिकार, शांति और पर्यावरण के प्रति सचेत होना
- भाषा सीखने के तरीके और प्रक्रिया को जानना और समझना
- पाठ्यचर्या, पाठ्यक्रम और पाठ्यपुस्तक का विश्लेषण कर कक्षा विशेष और बच्चों की समझ के अनुसार ढालना
- भाषा और साहित्य सम्बंध को जानना

- हिंदी भाषा के विविध रूपों और अभिव्यक्तियों को जानना
- भावों और विचारों की स्वतंत्रा अभिव्यक्ति करना
- भाषायी बारीकियों के प्रति संवेदनशील होना
- अनुवाद के महत्त्व और भूमिका को जानना
- विद्यार्थियों की सृजनात्मक क्षमता को पहचानना
- बच्चों के भाषायी विकास के प्रति समझ बनाना और उसे समुन्नत करने के लिए विद्यालय में तरह-तरह के मौके जुटाना
- भाषा के मूल्यांकन की प्रक्रिया को जानना
- साहित्यिक और गैर साहित्यिक मौलिक रचनाओं की समझ और सराहना
- भाषा सीखने-सिखाने के सृजनात्मक दृष्टिकोण को समझना

Course Outline:

इकाई - 1: भाषा की भूमिका

(बच्चा जब स्कूल आता है तो उसके पास भाषा का एक रूप मौजूद होता है। कक्षा में बच्चों की भाषा इस रूप को सम्मान देने से उसका आत्मविश्वास बढ़ेगा, यह सीखने की बुनियाद है।)

- 1 समाज में भाषा - भाषा और लिंग, भाषा और सत्ता भाषा और अस्मिता, भाषा और वर्ग
- 2 विद्यालय में भाषा - घर की भाषा और स्कूल की भाषा, समझ का माध्यम (बच्चे की भाषा) समूचे पाठ्यक्रम में भाषा, ज्ञान सृजन और भाषा, माध्यम भाषा: एक आलोचनात्मक दृष्टि, विषय के रूप में भाषा और माध्यम भाषा में अंतर, विविध भाषिक प्रयुक्तियाँ बहुभाषिक कक्षा, शिक्षक-शिक्षार्थी संबंध के पहलू के रूप में भाषा
- 3 संविधान और शिक्षा समितियों के रिपोर्ट में भाषा - भाषाओं की स्थिति (धारा 343-351, 350) कोठारी कमीशन (64 से 66) राष्ट्रीय शिक्षा नीति - 1986, पी.ओ. 2005 (भाषा अमययन) ए-1992, राष्ट्रीय पाठ्यचर्या -


गतिविधि/पोर्टफोलियो

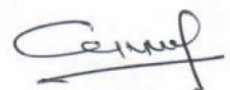
प्रशिक्षण के दौरान

छोटे समूह में बांट कर भारतीय भाषाओं के लिए निर्मित पोर्जीशन पेपर का अध्ययन और उस पर चर्चा।

- विज्ञान, समाज विज्ञान और गणित की कक्षा VI से VII की किताबों से कुछ अंश चुनकर निम्नलिखित बिंदुओं को ध्यान में रखते हुए विश्लेषण करिए-
- विभिन्न भाषिक प्रयुक्तियों को कैसे प्रस्तुत किया गया है।
- उस अंश में प्रयुक्त भाषा विषय संबंधी भाव स्पष्ट करने में कहाँ तक समर्थ है।
- बच्चे के स्तर के अनुरूप हैं?

 R. Kumar





- क्या इसमें तकनीकी भाषा का बहुत इस्तेमाल किया गया है ?
- क्या यह भाषा सीखने में सहायक है?

कक्षा-शिक्षण के दौरान

- कक्षा-शिक्षण के दौरान बच्चों के परिवेश और उनकी भाषा के बारे में जानकारी प्राप्त करें और बहुभाषिकता को स्रोत के रूप में इस्तेमाल करते हुए हिंदी शिक्षण की एक कक्षा-प्रविधि तैयार करें

परियोजना कार्य

- संविधान में भारतीय भाषाओं संबंधी अनुसंशाएँ तथा राष्ट्रीय शिक्षा नीति, पी.ओ.ए. द्वारा संस्तुत भाषा संबंधी सिफारिशों पर एक रिपोर्ट तैयार करना ।
- कक्षा छह से बारह तक के हिंदी की किताबों में लिंग और शांति संबंधी बिंदुओं की सूची तैयार कर उसके लिए कक्षा प्रविधि तैयार करना ।
- अपने आस-पास के पांच स्कूलों का दौरा कर यह जानकारी प्राप्त करते हुए एक रिपोर्ट तैयार करें कि त्रिभाषा सूत्र की क्या स्थिति है?

इकाई - 2: हिंदी भाषा की स्थिति और भूमिका

हिंदी भाषा की भूमिका: स्वतंत्रता से पहले और स्वतंत्रता के बाद हिंदी , हिंदी के विविध रूप, अंतर्राष्ट्रीय स्तर पर हिंदी , ज्ञान की भाषा के रूप में हिंदी , हिंदी पढ़ने-पढ़ाने की चुनौतियाँ।

गतिविधि/पोर्टफोलियो

प्रशिक्षण के दौरान

- स्वातन्त्र्योत्तर भारत में हिंदी की भूमिका पर समूह में चर्चा करें।
- जब शब्द नहीं रहते तब शस्त्र उठते हैं विषय पर परिचर्चा का आयोजन

कक्षा-शिक्षण के दौरान

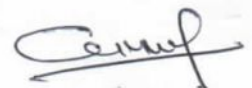
- चुने हुए कुछ कक्षाओं में बच्चों की भाषा का जायजा लेते हुए हिंदी के विविध रूपों पर एक रिपोर्ट तैयार करें।
- रोजमर्रा की जिंदगी में प्रयोग होने वाली कम से कम बीस क्रियाओं , जैसे नहाना, आना, पकाना, जाना आदि को कक्षा में मौजूद बच्चे किस-किस तरह से प्रयोग करते हैं - इस आधार पर सूची बनाएँ

परियोजना कार्य

- इस इकाई में दिए गए विषयों को ध्यान में रखते हुए एक प्रश्नावली तैयार करें, दस व्यक्तियों का साक्षात्कार करे इस साक्षात्कार के आधार पर हिंदी की स्थिति पर एक रिपोर्ट लिखें।







- हिंदी भाषा के विकास में क्षेत्रीय जनपदीय हिंदी की भूमिका पर आलेख पाठ करें। (हरेक विद्यार्थी अपने क्षेत्र विशेष को ध्यान में रखते हुए आलेख तैयार करें।)

इकाई - 3: भाषा शिक्षण पर एक दृष्टि

(हिंदी में विज्ञान, गणित, समाज विज्ञान और कला सब कुछ है पर ये विषय स्वयं हिंदी या भाषा नहीं हैं।)

भाषा सीखने सिखाने की विभिन्न दृष्टियाँ— भाषा अर्जन और अधिगम का दार्शनिक, सामाजिक और मनोवैज्ञानिक आधार, समग्र भाषा दृष्टि, रचनात्मक दृष्टि, भाषा सीखने-सीखाने की बहुभाषिक दृष्टि आदि (जॉनडुई, ब्रूनर, जे. प्याजे, एल. वायगात्स्की, चॉम्स्की आदि) भारतीय भाषा दृष्टि (पाणिनी, कामता प्रसाद गुरु, किशोरी दास वाजपेयी आदि)

भाषा शिक्षण की प्रचलित विधियाँ/प्रणालियाँ और उनका विश्लेषण — व्याकरण अनुवाद प्रणाली, प्रत्यक्ष प्रणाली, ढाँचागत प्रणाली, प्राञ्छतिक प्रणाली, उद्देश्यपरक (अन्तर्विषयक/अन्तर्नुशासनात्मक) संप्रेषणात्मक प्रणाली आदि।

गतिविधि/पोर्टफोलियो

प्रशिक्षण के दौरान

- 'मातृभाषा और अन्य भाषा' विषय पर छोटे समूह में चर्चा करें।

कक्षा शिक्षण के दौरान

- भाषा की कक्षा में रचनात्मक दृष्टिकोण को म्यान में रखते हुए चार गतिविधियाँ तैयार करें।

परियोजना कार्य

- विविध राजभाषा शिक्षा प्रणालियों का अध्ययन करते हुए उनका विश्लेषण कीजिए।

इकाई - 4: भाषा का स्वरूप

(कोई व्याकरण भाषा की चाल को बदल नहीं सकता। भाषा लोक व्यवहार से परिचालित होती है।)

1. भाषायी व्यवहार के विविध पक्ष— नियमबद्ध व्यवस्था के रूप में भाषा: भाषायी परिवर्तनशीलता (उच्चारण वेफ संदर्भ में) हिंदी की बोलियाँ वाक् तथा लेखन।

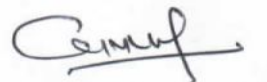
2. भाषायी व्यवस्थाएँ— सार्वभौमिक व्याकरण की संकल्पना, अर्थ की प्रकृति तथा संरचना, वाक्य विज्ञान तथा अर्थ विज्ञान की मूलभूत संकल्पनाएँ स्वनिम विज्ञान और रूप विज्ञान, (उपयुक्त उदाहरण देकर पढ़ाए जाएंगे)

गतिविधि/पोर्टफोलियो प्रशिक्षण/कक्षा शिक्षण के दौरान

- 'लिखित और मौखिक भाषा में अंतर' विषय पर समूह में चर्चा करें

 R. L. Suresh

 S. Anand

 S. Anand

इकाई -5: भाषायी दक्षताएँ

1. संदर्भ में भाषा – संदर्भ में व्याकरण और संदर्भ में शब्द
2. भाषायी दक्षताएँ– सुनना, बोलना, पढ़ना और लिखना
 - सुनना और बोलना – सुनने का कौशल, बोलने का लहजा– भाषाई विविधता और हिंदी पर इसका प्रभाव, पढ़ने-पढ़ाने पर इसका प्रभाव, सुनने और बोलने के कौशल विकास के स्रोत और सामग्री, रोलप्ले, कहानी सुनाना, परिस्थिति के अनुसार संवाद, भाषा लैब, मल्टीमीडिया तथा मौलिक सामग्री की सहायता से संप्रेषणात्मक वातावरण का निर्माण
 - पढ़ना – पढ़ने के कौशल, पढ़ने के कौशल विकास में समझ का महत्व, मौन और मुखर पठन, गहन-पठन, विस्तृत पठन, आलोचनात्मक पठन, पढ़ने के कौशल विकास में सृजनात्मक साहित्य (कहानी, कविता आदि) सहायक, थिसॉरस, शब्दकोश और इन्साइक्लोपीडिया का उपयोग/महत्व
 - लिखना – लिखने के चरण, लेखन-प्रक्रिया, सृजनात्मक लेखन, औपचारिक और अनौपचारिक लेखन (कहानी, कविता, संवाद, डायरी, पत्र, रिपोर्ट, समाचार आदि)

गतिविधि/पोर्टफोलियो

- सभी भाषायी कौशलों के सीखने से सम्बंधित 4-4 गतिविधियाँ तैयार करें और उनका कक्षा शिक्षण के दौरान प्रयोग करें।
- पढ़ने के कौशल विकास को ध्यान में रखते हुए कक्षा छह हिंदी के विद्यार्थी के लिए तीन गतिविधियाँ तैयार करें और उनका कक्षा शिक्षण के दौरान प्रयोग करें।
- सभी विद्यार्थी कक्षा छह से आठ के हिंदी पाठ्यपुस्तकों से संदर्भ में व्याकरण के दस नमूने इकट्ठा करें और उन पर समूह में चर्चा करें।

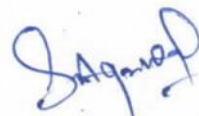
परियोजना कार्य :-

- सुनने और बोलने में असमर्थ बच्चों को ध्यान में रखते हुए हिंदी शिक्षण की दो गतिविधियाँ तैयार करें

संदर्भ :-

- 1.भाई योगेन्द्रजीत : हिन्दी भाषा शिक्षण,विनोद पुस्तक मंदिर आगरा
- 2.क्षत्रिय के : मात्रभाषा शिक्षण,विनोद पुस्तक मंदिर आगरा
- 3.लाल रमन बिहारी : हिन्दी शिक्षण,रस्तोगी पब्लिकेशन,मेरठ।
- 4.सफाया,रघुनाथ : हिन्दी शिक्षण,विधि,पंजाब किताब घर जालंधर।
- 5.शर्मा,डॉ.लक्ष्मीनारायण : भाषा 1,2 की शिक्षण विधियाँ और पाठ नियोजन, ,विनोद पुस्तक मंदिर आगरा
- 6.शर्मा,राजकुमारी : हिन्दी शिक्षण,राधा प्रकाशन मंदिर आगरा।
- 7.सिंह सावित्री : हिन्दी स्थल बुक डिपो मेरठ।







PAPER III**PEDAGOGY OF LANGUAGE (ENGLISH)****MARKS 80**

School education and teacher-education share a symbiotic relationship. To have qualitative improvement in education, both teacher-education and school education need to mutually reinforce each other. NCF-2005 and the Right to Education Act, 2009 suggest a rethinking in the area of teacher-education as well. A need to review and redesign the B.Ed. Syllabus was felt as NCF-2005 expects the teacher to look at school education in a holistic manner. It advocates learner-centred learning rather than teacher-centred teaching. Teacher's attitude, aptitude and motivation play an important role because the teacher needs to engage with the learning process of the learner. Teacher as a facilitator helps learners construct their knowledge. The teacher should be able to participate meaningfully to transact the syllabus and textbooks effectively along with teaching-learning materials. Therefore, the teacher should be well-versed not only with the subject content but also with the pedagogy of learning.

Aims of the Course:**To enable the student- teacher to understand**

- Understand the different roles of language;
- Understand the relation between literature and language;
- Understand and appreciate different registers of language;
- Develop creativity among learners;
- Understand the role and importance of translation;
- Examine authentic literary and non-literary texts and develop insight and appreciation;
- Understand the use of language in context, such as grammar and vocabulary;
- Develop activities and tasks for learners;
- Understand the importance of home language and school language and the role of mother tongue in education;
- Use multilingualism as a strategy in the classroom situation;
- Develop an understanding of the nature of language system;
- Understand about the teaching of poetry, prose and drama;
- Identify methods, approaches and materials for teaching English at various levels in the Indian context;
- Understand constructive approach to language teaching and learning;
- Develop an insight into the symbiotic relationship between curriculum syllabus and textbooks;

- Develop and use teaching aids in the classroom both print and audio-visual material, and ICT (internet and computer technology);
- Understand the process of language assessment;
- Understand need and functions of language lab;
- Sensitise teacher-students about emerging issues, such as right to education for children,
- Peace and environment education in context with language teaching; and familiarise students with our rich culture, heritage and aspects of our contemporary life.
- Language classroom and texts have a lot of scope to make students sensitive towards surroundings, people and the nation.

Course Outline:

UNIT I: ROLE OF LANGUAGE

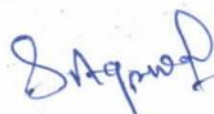
1. LANGUAGE AND SOCIETY: Language and Gender; Language and Identity; Language and Power; Language and Class (Society).
2. LANGUAGE IN SCHOOL: Home language and School language; Medium of understanding (child's own language); Centrality of language in learning; Language across the curriculum; Language and construction of knowledge; Difference between language as a school- subject and language as a means of learning and communication; Critical review of Medium of Instruction; Multilingual classrooms; Multicultural awareness and language teaching.
3. CONSTITUTIONAL PROVISIONS AND POLICIES OF LANGUAGE EDUCATION: Position of Languages in India; Articles 343-351, 350A; Kothari Commission (1964-66); NPE- 1986; POA-1992; National Curriculum Framework-2005 (language education).

Activities:

Discussion on Position paper on 'Teaching of English'

- Position paper on 'Teaching of Indian Languages'
- 'Multilingualism as a Resource'
- Analysis of advertisements aired on Radio/Television on the basis of language and gender.
- Take a few passages from Science, Social Science and Maths textbooks of Classes VI to VII and analyses:
 - (i) How the different registers of language have been introduced?
 - (ii) Does the language clearly convey the meaning of the topic being discussed?
 - (iii) Is the language learner-friendly?
 - (iv) Is the language too technical?
 - (v) Does it help in language learning?
- Now write an analysis based on the above issues.

 R. L. L.





Project

- Prepare a report on the status of languages given in the Constitution of India and language policies given in Kothari Commission, NPE-SYLLABUS FOR TWO-YEAR BACHELOR OF EDUCATION 1986, and POA-1992.
- Visit five schools in the neighbourhood and prepare a report on the three language formula being implemented in the schools.
- Teaching Practice
- Talk to the students and find out the different languages that they speak.
- Prepare a plan to use multilingualism as a strategy in the English classroom.
- On the basis of the English Textbooks (VI to XII) prepare a list of Topics and activities given on: (i) Language and Gender (ii) Language and Peace. Write a report on their reflection in the textbooks.

UNIT II: POSITION OF ENGLISH IN INDIA

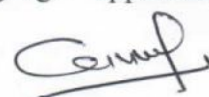
- **ROLE OF ENGLISH LANGUAGE IN THE INDIAN CONTEXT:** English as a colonial language,
- English in Post-colonial times; English as a language of knowledge; Position of English as second language in India; English and Indian languages; English as a link language in global context; challenges of teaching and learning English.
- **Activities**
 - Discuss in groups how the role of English language has changed in the twenty-first century.
 - Topic for Debate: Globalisation and English
 - Discussion on the topic 'War Begins When Words Fail'
 - Keeping in view the topics given in this unit, prepare a questionnaire.
 - Interview ten people and write a report on 'English Language in India'.
- **Project:**
 - Do a survey of five schools in your neighbourhood to find out:
 1. Level of Introduction of English
 2. Materials (textbooks) used in the classroom
 - Prepare a report on the challenges faced by the teachers and the learners in the teaching- learning process.

UNIT III: AN OVERVIEW OF LANGUAGE TEACHING

1. DIFFERENT APPROACHES/THEORIES TO LANGUAGE LEARNING AND TEACHING (MT & SL)
 - Philosophical, social and psychological bases of approaches to Language acquisition and Language learning; inductive and deductive approach; whole language approach;







constructive approach; multilingual approach to language teaching (John Dewey, Bruner, J. Piaget, L. Vygotsky, Chomsky, Krashen), and Indian thought on language teaching.

2. A CRITICAL ANALYSIS OF THE EVALUATION OF LANGUAGE TEACHING METHODOLOGIES:

- Grammar **t r a n s l a t i o n m e t h o d , d i r e c t m e t h o d , S t r u c t u r a l - s i t u a t i o n a l m e t h o d , b i l i n g u a l** method, communicative approach.
- Activities
 - Discussion on the topic 'Mother Tongue and Other Tongue'
- Project
 - Do a comparative study of positive features and weaknesses of different approaches to language learning.
- Teaching Practice
- Prepare four activities keeping in view 'Constructivism in a Language Classroom'.

UNIT IV: NATURE OF LANGUAGE

1. ASPECTS OF LINGUISTIC BEHAVIOUR: Language as a rule-governed behaviour and linguistic variability; Pronunciation—linguistic diversity, its impact on English, pedagogical implication; Speech and writing.
2. LINGUISTIC SYSTEM: The organisation of sounds; The structure of sentences; The concept of Universal grammar; Nature and structure of meaning; Basic concept in phonology, morphology, syntax and semantics; Discourse.

Activities

- Have a discussion on the topic 'Difference Between Spoken and Written Language'.

UNIT 5: ACQUISITION OF LANGUAGE SKILLS

1. Grammar in context; vocabulary in context
2. Acquisition of language skills: Listening, speaking, reading and writing.
 - Listening and Speaking: Sub skills of listening: Tasks; Materials and resources for developing the listening and speaking skills: Storytelling, dialogues, situational conversations, role plays, simulations, speech, games and contexts, language laboratories, pictures, authentic materials and multimedia resources
 - Reading: Sub skills of reading; Importance of understanding the development of reading skills; Reading aloud and silent reading; Extensive and intensive reading; Study skills, including using thesauruses, dictionary, encyclopedia, etc.
 - Writing: Stages of writing; Process of writing; Formal and Informal writing, such as poetry, short story, letter, diary, notices, articles, reports, dialogue, speech, advertisement, etc; Reference skills; Study skills; Higher order skills.
- Activities
 - Collect ten examples of Grammar in context from English Textbooks of Classes VI to

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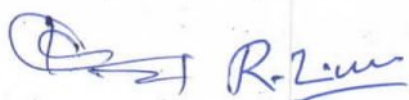
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VIII and have a group discussion.

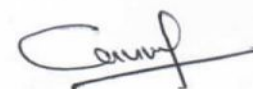
- Teaching Practice
- Prepare activities for listening, speaking, reading and writing. (5 Each)
- Prepare three activities to develop the reading skills of Class VI students.
- Project
 - Keeping in view the needs of the children with special needs prepare two activities for English teachers.

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PAPER III:

PEDAGOGY OF SOCIAL SCEINCES

MARKS 80


This course in the teaching of Social Sciences introduces student teachers to matters of both content and pedagogy. Some emphasis on content seems necessary in view of the fact that many student teachers may not be having sufficient exposure to four major disciplines of Social Sciences. In fact, the pedagogy of a field of enquiry cannot be separated from its content. This course will help student teachers understand key concepts of the various Social Sciences as well as related pedagogical issues. Furthermore, student teachers should be encouraged to see interconnections between the different Social Sciences, i.e. see Social Sciences as an integrated area of study.

Social and economic issues and the concerns of Indian society have been introduced through real-life situations and primary sources of information. *Student-teachers are encouraged to grasp concepts and to develop thinking skills.* That is why, in certain cases, Case Studies for the transactions of topics have been indicated.

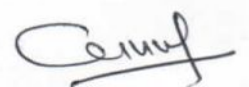
Aims of the Course:

To enable the student-teacher to understand

- To develop an understanding of the nature of Social Sciences, both of individual disciplines comprising Social Sciences, and also of Social Sciences as an integrated/interdisciplinary area of study;
- To acquire a conceptual understanding of the processes of teaching and learning Social Sciences
- To enable student teachers examine the prevailing pedagogical practices in classrooms critically and to reflect on the desired changes;
- To acquire basic knowledge and skills to analyse and transact the Social Sciences curriculum effectively following wide-ranging teaching-learning strategies in order to make it enjoyable and relevant for life;
- To sensitize and equip student teachers to handle social issues and concerns in a responsible manner, e.g., preservation of the environment, disaster management, promoting inclusive education, preventing social exclusion of children coming from

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socially and economically deprived backgrounds, and saving fast depleting natural resources (water, minerals, fossil fuels etc.).

Course Outline:

UNIT I: SOCIAL SCIENCES AS AN INTEGRATING AREA OF STUDY: CONTEXT AND CONCERNS

- Distinguishing between Natural and Social Sciences: Major Social Sciences disciplines in Schools.
- What is 'social' about various Social Sciences?
- Uniqueness of disciplines vis-a-vis interdisciplinarity
- Linking child's natural curiosity with natural phenomena like weather, flora and fauna; spatial and temporal contexts; important social and economic issues and concerns of the present-day Indian society.
- Multiple perspectives/plurality of approaches for constructing explanations and arguments.

UNIT II: TEACHING-LEARNING RESOURCES IN SOCIAL SCIENCES

- People as resource: The significance of oral data.
- Types of Primary and Secondary Sources: Data from field, textual materials, journals, magazines, newspapers, etc.
- Using the library for secondary sources and reference material, such as dictionaries and encyclopedias.
- Various teaching aids: Using atlas as a resource for Social Sciences; maps, globe, charts, models, graphs, visuals.
- Audio-visual aids, CD-Rom, multimedia, internet.

UNIT III: SOCIAL SCIENCES CURRICULUM FOR SCHOOLS IN INDIA

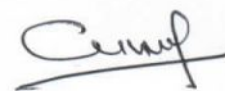
- Curriculum development process: National and State levels.
- Studying the Social Sciences syllabus - aims and objectives, content organization and presentation of any State Board and CBSE for different stages of school education.

UNIT IV: TEACHING-LEARNING OF GEOGRAPHY—SPACE, RESOURCES AND DEVELOPMENT

- Meaning, Nature and Scope of Geography: Current Trends
- Teaching and Learning Major Themes and Key Concepts in Geography
- LOCATION: Absolute (Grid system of latitudes and longitudes) and relative location: two ways of describing the positions of places and people on the earth's surface. Differentiating between sites (location) and situation (place).
- PLACE: Distinct physical and human characteristic of places that distinguish one from

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the other.

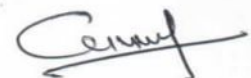
- **MOVEMENTS:** Interdependence and interaction across space, migration of people, transport and communication; trade and commerce, patterns of centres, pathways and hinterlands.
- **REGIONS:** Formation and change.
- The above content may be used to understand teaching, learning strategies and skill development in Geography.
- **Developing Skills in Geography**
- Observation, recording and interpretation of physical and social features and phenomena; Reading and interpreting geographical information through tables, figures, diagrams, photographs; Map reading and interpreting using scale (distance), direction, symbols, point, line and area; Visual-to-verbal and verbal-to-visual transformation leading to mental mapping; Identifying, constructing and asking geographical questions; Developing and gathering relevant information and data and analysing them to answer geographical questions and offering explanations and interpretations of their findings; applying acquired knowledge and skills for understanding the wider world and taking personal decisions; taking up activities to study environmental degradation in the local area and its preservation methods; studying any disaster involving all factors at the local/global levels.
- **Teaching Strategies in Geography**
- Questioning; Collaborative strategies; Games, simulations and role plays; Values clarification; Problem-solving and decision-making.
- **METHODS:** Interactive verbal learning; Experiential learning through activities, experiments; Investigative field visits based on students' own interests with teacher's support as facilitator; Engagement with 'places' at an emotional or sensory level using art, poetry and literature.
- **TECHNIQUES:** Using textbooks and atlas as a part of oral lessons, non-oral working lessons; using medium and large scale maps; using pictures, photographs, satellite imageries and aerial photographs; using audio-visual aids, CDs, multimedia and internet; case study approach.

UNIT V: TEACHING-LEARNING OF ECONOMICS: STATE, MARKET AND DEVELOPMENT

- As a branch of social science, economics is concerned with people. It studies how to provide them with means to realise their potential. This unit on economics deals with the broad themes of state, market, and development. Market and state are interrelated as instruments of development. The course endeavours to introduce the learners to key economic concepts and issues that affect their everyday lives.
- **Meaning, Nature and Scope of Economics: Current Trends Key Concepts in Economics**
- **Scarcity and choice, opportunity cost, productivity, demand, supply and market mechanism, Division of labour and specialization.**

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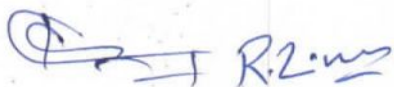




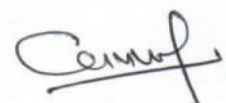
- Classification of Economic System
- Capitalism, Socialism, mixed economy (case study: India)
- Developmental Issues in Economics
- Sustainable Development—economic growth and economic development— indicators of measuring the well-being of an economy; Gross Domestic Product; economic planning; Poverty; Food Security; Price rise; Role and functions of Money—formal and informal financial institutions and budget; Classification of Production Activities—primary, secondary and tertiary;
- Economic Reforms and Globalization (discuss these developmental issues with reference to India).
- The above content may be used to understand the teaching, learning strategies and skill development in economics.
- Teaching-Learning Methods in Economics
- In addition to usual methods like lecture, discussion, storytelling, other methods like problem-solving, simulation games, use of media and technology, concept mapping, project and activities like field visits (e.g. visit to a construction site for data on wages and employment), collection of data from documents (e.g. Economic Survey, Five Year Plan), analyzing and interpreting data (using simple tables, diagrams and graphs) can be undertaken. Self-study and collaborative learning activities should be encouraged.
- Teaching-Learning Materials
- Using textbook, analysis of news (Newspaper, TV, and Radio); documents (e.g. Economics Survey, Five Year Plan), Journals and News Magazines.

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PEDAGOGY OF MATHEMATICS

MARKS 80

Aims of the Course**To enable the student-teacher to understand**

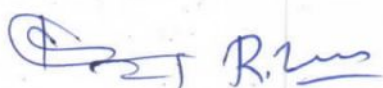
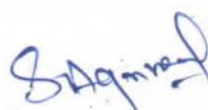
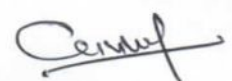
- Develop insight into the meaning, nature, scope and objective of mathematics education;
- Appreciate mathematics as a tool to engage the mind of every student;
- Appreciate mathematics to strengthen the student's resource;
- Appreciate the process of developing a concept;
- Appreciate the role of mathematics in day-to-day life;
- Learn important mathematics: mathematics is more than formulas and mechanical procedures;
- Channelize, evaluate, explain and reconstruct their thinking;
- See mathematics as something to talk about, to communicate through, to discuss among themselves, to work together on;
- Pose and solve meaningful problems;
- Appreciate the importance of mathematics laboratory in learning mathematics;
- Construct appropriate assessment tools for evaluating mathematics learning;
- Develop ability to use the concepts for life skills;
- Stimulate curiosity, creativity and inventiveness in mathematics;
- Develop competencies for teaching-learning mathematics through various measures
- Focus on understanding the nature of children's mathematical thinking through direct observations of children's thinking and learning processes; and
- Examine the language of mathematics, engaging with research on children's learning in specific areas.

Course Outline:**UNIT 1: NATURE AND SCOPE OF MATHEMATICS**

Meaning and scope of mathematics, A mathematical theorem and its variants—converse, inverse and contra-positive, proofs and types of proofs, Difference between proof and verification; Deductive nature of mathematics; History of mathematics with special emphasis on teaching of mathematics, contribution of Indian mathematicians; Aesthetic sense in mathematics and beauty in mathematics.

UNIT 2: EXPLORING LEARNERS

Cultivating learner's sensitivity like intuition, encouraging learner for probing, raising queries, appreciating dialogue among peer -group, promoting the student's confidence (Carrying out

examples from various mathematical content areas, such as Number Systems, Geometry, Sets, etc.).

UNIT 3: AIMS AND OBJECTIVES OF TEACHING SCHOOL MATHEMATICS

Need for establishing general objectives for teaching mathematics; Study of the aims and general objectives of teaching mathematics vis-a-vis the objectives of school education; writing specific objectives and teaching points of various content areas in mathematics like Algebra, Geometry, Trigonometry, etc.

UNIT 4: SCHOOL MATHEMATICS CURRICULUM

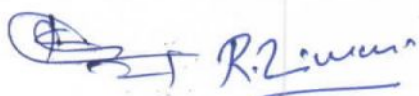
Objectives of curriculum, principles for designing curriculum, designing curriculum at different stages of schooling, Some highlights of curriculum like vision of school mathematics, main goal of mathematics education, core areas of concern in school mathematics, curricular choices at different stages of school mathematics education, construction of syllabi in various disciplines of mathematics, for example, Algebra, Geometry, etc.; Pedagogical analysis of various topics in mathematics at various level of schooling—Arithmetic (Development of Number Systems), Algebra, Trigonometry, Statistics and Probability, etc.

UNIT 5: APPROACHES AND STRATEGIES IN TEACHING AND LEARNING OF MATHEMATICAL CONCEPTS

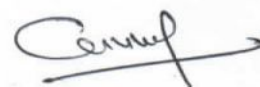
Nature of concepts, concept formation and concept assimilation, Moves in teaching a concept—defining, stating necessary and/or sufficient condition, giving examples accompanied by a reason. Comparing and contrasting; Giving counter examples; Non-examples; Planning and implementation of strategies in teaching a concept like teaching of algebra, geometry, trigonometry, mensuration, etc.; Difference between teaching of mathematics and teaching of science.

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4. How children learn mathematics – Capeland (New York): M.C.Millan Pub. 1979
5. Mathematics for modern mind – W.R.Fuch (New York): M.C.Millan Pub. 1967
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11. The teaching of mathematics in the new Education – N.K.Ayengar
12. Teaching of essentials of mathematics, Ballard,p.b.

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13. The development of mathematics, Bell, E.T.
14. The teaching of mathematics, Chadha, B. N.
15. The teaching of secondary mathematics, BUTTER & WREN
16. The teaching of arithmetic, C. POTTER, F.F.
17. MATHEMATICS FOR CLASS 9TH NCERT
18. MATHEMATICS FOR CLASS 10TH NCERT
19. TEACHING OF MATHEMATICS (ENG/HINDI), Dr. S.K. MANGAL
20. TEACHING OF MATHEMATICS (ENG/HINDI), Dr. A.B. BHATNAGER
21. TEACHING OF MATHEMATICS, A.K. KULSHESTHA.

PAPER III:

PEDAGOGY OF BIOLOGICAL SCIENCE

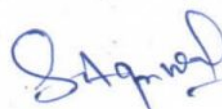
MARKS 80


Aims of the Course:

To enable the student-teacher to understand

- Develop insight on the meaning and nature of biological science for determining aims and strategies of teaching-learning;
- Appreciate that science is a dynamic and expanding body of knowledge;
- Appreciate the fact that every child possesses curiosity about his/her natural surroundings
- Identify and relate everyday experiences with learning biological science;
- Appreciate various approaches of teaching-learning of biological science;
- Explore the process skill in science and role of laboratory in teaching-learning;
- Use effectively different activities/experiments/demonstrations/ laboratory experiences for teaching-learning of biological science;
- Integrate the biological science knowledge with other school subjects;
- Analyse the contents of biological science with respect to its branches, process skills, knowledge organisation and other critical issues;
- Develop process-oriented objectives based on the content themes/units;
- Identify the concepts of biological science that are alternatively conceptualised by teachers and students in general;
- Explore different ways of creating learning situations for different concepts of biological science;
- Formulate meaningful inquiry episodes, problem-solving situations, investigatory and

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discovery learning projects based on upper primary, secondary and higher secondary stages, facilitate development of scientific attitudes in learners;

- Examine different pedagogical issues in learning biological science;
- Construct appropriate assessment tools for evaluating learning of biological science;
- Stimulate curiosity, inventiveness and creativity in biological science;
- Develop ability to use biological science concepts for life skills; and
- Develop competencies for teaching, learning of biological science through different measures.

Course Outline:

UNIT I: NATURE AND SCOPE OF BIOLOGICAL SCIENCE

Science as a domain of enquiry, dynamic body of knowledge and as a process of constructing knowledge; Biological Science for environment and health, peace, equity; History of biological science, its nature and knowledge of biological science independent of human application; Origin of life and evolution, biodiversity, observations and experiments in biological sciences; Interdisciplinary linkages, biological sciences and society.

UNIT II: AIMS AND OBJECTIVES OF BIOLOGICAL SCIENCE

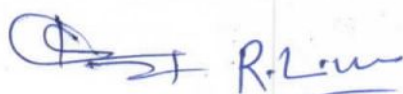
Developing scientific attitude and scientific temper; Nurture the natural curiosity, aesthetic senses and creativity in biology; Acquire the skills to understand the methods and process that lead to exploration; Generalisation and validation of scientific knowledge in biological science; Relate biology education to environment (natural environment, artifacts and people) and appreciate the issues at the interface of science technology and society; Imbibe the values of honesty, integrity, cooperation, concern for life and preservation of environment; Solving problems of everyday life; Know the facts and principles of biology and its applications consistent with the stages of cognitive development of learners; Specific objective of different content areas in biology.

UNIT III: EXPLORING LEARNERS

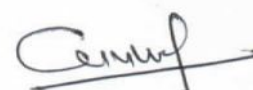
Motivating learner to bring his/her previous knowledge in science/biology gained through classroom/environment/parents and peer group. Cultivating in teacher-learner the habit of listening to child; Generating discussion, involving learners in teaching-learning process, encouraging learners to raise questions, appreciating dialogue amongst peer groups, encouraging learners to collect materials from local resources and to develop/fabricate suitable activities in biological science (individual or group work); Role of learners in negotiating and mediating learning in biology.

UNIT IV: SCHOOL SCIENCE CURRICULUM (BIOLOGICAL SCIENCE)

Trends in Science curriculum; Consideration in developing learner-centred curriculum in biology; Analysis of textbooks and biology syllabi of NCERT and States/UTs at upper primary, secondary and higher secondary stages; Analysis of other print and non-print materials in the area of biological science used in various states.

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UNIT V: APPROACHES AND STRATEGIES OF LEARNING BIOLOGICAL SCIENCE

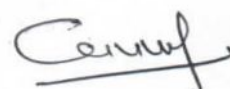
Pedagogical shift from science as fixed body of knowledge to process constructing knowledge, scientific method - observation, enquiry, hypothesis, experimentation, data collection, generalisation (teacher-educator will illustrate taking examples from different stage-specific content areas keeping in mind the variation, e.g. structure and function, molecular aspects, interaction between living and non living, biodiversity, etc.); Communication in biological sciences; Problem solving, investigatory approach, concept mapping, collaborative learning, and experiential learning in biological science (teacher-learner will design learning experiences using each of these approaches); Facilitating learners for self-study.

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13. Prof. S.K. Tyagi : Teaching of Biological Sciences.
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15. All NCERT Science Text Books from class IX to XII.

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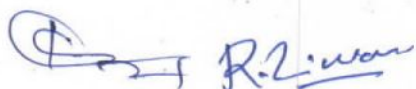
PAPER III:**PEDAGOGY OF PHYSICAL SCIENCE****MARKS 80****Aims of the Course:****To enable the student-teacher to understand**

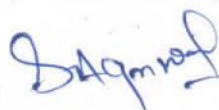
- Gain insight on the meaning and nature of physical science for determining aims and strategies of teaching-learning;
- Appreciate that science is a dynamic and expanding body of knowledge;
- Appreciate the fact that every child possesses curiosity about his/her natural surroundings;
- Identify and relate everyday experiences with learning physical science;
- Appreciate various approaches of teaching-learning of physical science;
- Understand the process of science and role of laboratory in teaching-learning situations;
- Use effectively different activities/demonstrations/laboratory experiences for teaching-learning of physical science;
- Integrate in physical science knowledge with other school subjects;
- Analyse the contents of physical science with respect to its branches, process skills, knowledge organisation and other critical issues;
- Develop process-oriented objectives based on the content themes/units;
- Identify the concepts of physical science that are alternatively conceptualised by teachers and students in general;
- Explore different ways of creating learning situations in learning different concepts of physical science
- Formulate meaningful enquiry episodes, problem-solving situations, investigatory and discovery learning projects based on upper primary, secondary and higher secondary school science/physics and chemistry
- Facilitate development of scientific attitudes in learners;
- Examine different pedagogical issues in learning physical science; and
- Construct appropriate assessment tools for evaluating learning of physical science.

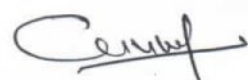
Important: Various Concepts of Pedagogy of Physical Science listed in Units 1 to 10 (PART I & PART II) given below will be evolved around the concepts given at upper primary, secondary and higher secondary (Physics and Chemistry) Science syllabi.

Course Outline:**UNIT I: NATURE OF SCIENCE**

Science as a domain of enquiry, as a dynamic and expanding body of knowledge; Science as a

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process of constructing knowledge; Science as interdisciplinary area of learning (Thermodynamics, Biomolecules, Surface Chemistry, etc.); Facts, concepts, principles, laws and theories—their characteristics in context of physical science (citing examples for each); Physical science for environment, health, peace, equity; Physical sciences and society; Contribution of eminent scientists—Isaac Newton, Dalton, Neils Bohr, De Broglie, J. C. Bose, C. V. Raman, Albert Einstein, etc.

UNIT II: AIMS AND OBJECTIVES OF PHYSICAL SCIENCE

Developing scientific attitude and scientific temper, Nurture the natural curiosity, aesthetic senses and creativity in Science (secondary stage)/ Physics and Chemistry (higher secondary stage); Acquire the skills to understand the method and process of science/physical science that lead to exploration, generation and validation of knowledge in science/physical science; Relate Science/Physics and Chemistry education to the environment (natural environment, artifacts and people) and appreciate the issues at the interface of science technology and society; Imbibe the values of honesty, integrity, cooperation, concern for life and preservation of environment, Solving problems of everyday life; Know the facts and principles of science/physics and chemistry and its applications consistent with the stages of cognitive development of learners, (e.g. Mechanics, Heat, Electricity, Magnetism, Light, Acid, Bases and Salts, Thermodynamics, Metallurgy, Physical and Chemical Changes, Nature and States of Matter, etc.); Specific objective of different content areas in science/physics and chemistry.

UNIT III: EXPLORING LEARNERS


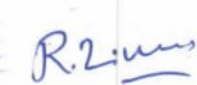
Motivating learners to bring his/her previous knowledge gained in science/ physics and chemistry through classroom/environment/parents and peer group; Cultivating in teacher-learner the habit of listening to child; Generating discussion, involving learners in teaching-learning process; Encouraging learners to raise questions, appreciating dialogue amongst peer group; Encouraging learners to collect materials from local resources (soil, water, etc.) and to develop/fabricate suitable activities in science/ physics and chemistry (individual or group work); Role of learners in negotiating and mediating learning in science/physical science.

UNIT IV: SCHOOL SCIENCE CURRICULUM (PHYSICAL SCIENCE)

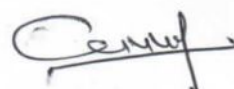
Trends in Science curriculum; Consideration in developing learner-centred curriculum in physical science, Analysis of science/physics and chemistry syllabi and textbooks of NCERT and States (at upper primary, secondary and higher secondary stage); Analysis of other print and non-print materials used in various states in the area of physical science.

UNIT V: APPROACHES AND STRATEGIES OF LEARNING PHYSICAL SCIENCE

Pedagogical shift from science as fixed body of knowledge to process of constructing knowledge, scientific method—observation, enquiry, hypothesis, experimentation, data collection, generalisation (teacher-educator will illustrate each taking examples from specific contents of science/physics and chemistry, such as Solutions, Colloids, Chemical Equilibrium, Electrochemistry, Mechanical and Thermal Properties of Matter, Reflection, Refraction, Wave Optics etc.); Communication in Science/Physical science, Problem solving, investigatory

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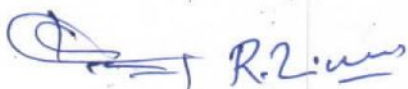




approach, concept mapping, collaborating learning and experiential learning in science/ physics and chemistry (teacher-learner will design learning experiences using each of these approaches), facilitating learners for self-study.

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