SEMESTER – I

Course Code: BD1PS	Credits: 5

PEDAGOGY OF PHYSICAL SCIENCE – I

COURSE OBJECTIVES

CO1. Understand the aims and objectives of teaching Physical Science.

CO2. Comprehend the various teaching skills.

CO3. Learn instructional objectives for a Lesson

CO4. Identify different methods in teaching Physical Science

CO5. List the various resources in teaching Physical Science

UNIT-I: AIMS AND OBJECTIVES OF TEACHING PHYSICAL SCIENCE

Physical Science: Meaning, Nature, Scope, Need and Significance of teaching Physical Science - Values,Aims and Objectives of teaching Physical Sciencein Schools - Instructional objectives and Behavioural Objectives of Physical Science - Need and Importance of Instructional Objectives. Bloom's Taxonomy of Instructional Objectives: Cognitive, Affective and Psychomotor Domains, Revised Bloom's Taxonomy 2001 (Anderson &Krathwohl).

UNIT-II: TEACHING SKILLS

Micro-Teaching : Concept, Definition, Steps, Cycle - Skill of Set Induction - Skill of Explaining, Skill of Questioning, Skill of Explaining, Skill of Stimulus Variation, Skill of Reinforcement, Skill of Closure - Link lesson – Model episode.

UNIT – III: APPROACHES OF TEACHING

Approaches of Lesson Planning - Steps - Organizing Teaching: Memory Level (Herbartian Model), Understanding Level (Morrison teaching Model), Reflective Level (Bigge and Hunt Teaching Model)– Unit Plan – Lesson Plan Writing.

UNIT-IV: METHODS OF TEACHING

Teacher Centered Instruction: Lecture method, Demonstration and Team Teaching – Learner Centered Instruction: Self-Learning – Forms of Self-Learning: Programmed Instruction, Investigatory approach, Collaborative learning, experimental learning, Computer Assisted

Instruction, Keller Plan, Project Method, Activity Based Learning (ABL), Active Learning Method (ALM) - Advanced Active Learning Method (AALM)-Concept Map.

UNIT- V: INSTRUCTIONAL MEDIA

Classification of Instructional Media in Physical Science – Use of Mass media in classroom Instruction. New Emerging Media: Tele-Conferencing, Communication Satellites, Computer Networking, Word Processors, Blended Learning, Flipped Classroom, Artificial Intelligence and Augmented Reality.

SUGGESTED ACTIVITIES

1. Students' seminar on Blended learning, Flipped classroom and Artificial Intelligence.
2. Students' Seminar on Lesson Plan Writing.
3. Teacher talk / Invited talk on Bloom's Taxonomy of Instructional Objectives.
4. Teacher talk / Invited talk on Micro teaching Steps, Cycle, principles and on different skills like, skill of stimulus variation, skill of reinforcement and skill of questioning.
5. Teacher talk on Herbartian Model and Morrison Teaching Model.

TEXT BOOKS

1. Bawa,M.S.&Nagpal,B.M.(2010).*Developingteachingcompetencies*.NewDelhi: Viva Book House.
2. Bhatia,K.K.(2001)Foundationsofteachinglearningprocess.Ludhiana:TandonPublications
3. Bloom,S.Benjamin, (1984). *Taxonomyofeducationalobjectives:*Book1Cognitivedomain. NewYork: Longmans,Green.
4. Gupta,S.K.(1985). *Teachingofphysicalscienceinsecondaryschools*.New Delhi: SterlingPublications.
5. Joyce & Weil ,(2004). *Modelsofteaching*.NewDelhi: PrenticeHallofIndia.

SUPPLEMENTRY READINGS

1. VenkatRao N &Ramuluch A (2016). Pedagogy of Physical Science, Hyderabad: Neelkamal Publisher
2. Panneerselvam A &Rajendiran K (2009). Teaching of physical science, Chennai: Shantha Publishers

3. Pramod Kumar N K. Ramaiah N K &Sreedharachayulu K (2016). Pedagogy of Physical Sciences, Hydrabad: Neelkamal Publishers.
4. Arul Jothi D. L. Balaji& Vijay Kumar (2019). Teaching of physical Science –I New Delhi: Centrum Press Publishers
5. Kulshrestha S P GayaSingh (2019). Pedagogy of School Subject Physical Science, Meerut: R.LALL Book Publishers
6. AmalKantiSarkar (2020). Pedagogy of Science Teaching Physical Science, Kolkata: Rita Publications
7. Josh S R (1985). Teaching of Science, New Delhi: APH Publishing Corporation
8. Pedagogy of Science PART-I, National Council of Educational Research and Training
9. Amit Kumar (2002). Teaching of Physical Sciences, Bangaluru: Anmol Publications Pvt Ltd
10. Radha Mohan (2012). Teaching of Physical Science, Hydrabsd: Neelkamal Publisher

E - RESOURCES

1. http://teaching.uncc.edu/learning-resources/articles- books/best-practice/instructional-methods/150-teaching-methods
2. http://en.wikipedia.org/science_education
3. http://iat.com/learning-physical-science

COURSE OUTCOMES

After completion of this course, the student-teachers will be able to:

CO1. examine the need and significance of teaching Physical Science.

CO2. formulate the instructional objectives of a lesson.

CO3. practise the microteaching skills in Physical Science.

CO4. interprets various methods of teaching Physical Science.

CO5. analyse and use the resources for teaching Physical Science.

OUTCOME MAPPING

COURSE OUTCOMES	PROGRAMME SPECIFIC OUTCOMES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
CO1										*						*								
CO2						*				*			*		*		*							
CO3												*									*		*	
CO4		*					*											*			*		*	
CO5					*												*							*