

SEMESTER – II

Course Code: BD2CS	Credits: 5
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PEDAGOGY OF COMPUTER SCIENCE – II**COURSE OBJECTIVES**

- CO1. Understand the concept of Pedagogy, Andragogy and Heutagogy
- CO2. Comprehend Skinner's operant training model, Bruner's Concept attainment model and Instructional models in Computer – based learning.
- CO3. Apply activity based and Group-controlled Instruction in learning pedagogy of computer science.
- CO4. Use educational resources and types of resources in learning Computer Science.
- CO5. Gain knowledge and understand the construction of achievement test in preparing blue print.

UNIT -1 PEDAGOGICAL ANALYSIS

Paradigm shift from pedagogy to Andragogy to Heutagogy – Concept and stages – Critical Pedagogy: Meaning, Foster independent thinking through critical pedagogy, Need and its implications in Teacher Education. Interaction Analysis: Flanders' Interaction analysis, Galloway's system of interaction analysis (Recording of Classroom Events, Construction and Interpretation of Interaction Matrix). Steps in pedagogical analysis – Five pedagogical approaches – software pedagogy – pedagogical beliefs and attitudes of Computer Science – measuring Computer Science pedagogical content knowledge.

UNIT-II: TEACHING MODELS

Bloom's Mastery Learning, Skinner's Operant Training, Bruner's Concept attainment, Ausubel's Advance Organizer, Glaser's Basic Teaching (Classroom Meeting), Byron Massials and Benjamin cox's social inquiry, Carl Roger's Non-directive and William Gordon's Synectic's models – types of teaching models – instructional models in Computer-based learning.

UNIT-III: ACTIVITY-BASED AND GROUP CONTROLLED INSTRUCTION

Activity Based Instruction: Concept, Classification – Role Play, Simulation, Incident method, Case Study method, Gaming and prioritisation exercises. Group Controlled Instruction: Concept, Definition and Importance of Group Controlled Instruction – Types of Groups Controlled Instruction: Group Interactive sessions, Co-operative Learning methods, Group investigation, Group

Projects - Computer Science activities – active learning computer science –Three methods of instruction – four types of instructional activities – pros and cons of group-controlled instruction – control instructions in Computer Architecture.

UNIT-IV RESOURCE – BASED LEARNING

Defining educational Resource and Resource Centre (Area), Resource Bank, Resource Island, Resource Peninsula – Types of Resources, Users and their Role in a resource centre: Teacher, Learners and Technical Staff.Resource-based learning model – coding and Computer Science resources – resource-based learning activities – benefits of resource-based learning.

UNIT – V: ASSESSMENT IN PEDAGOGY OF COMPUTER SCIENCE

Criteria for Teacher Evaluation – Concept of Test, Measurement and Evaluation – Differentiate between Assessment and Evaluation – Standardization of Test, Principles and steps involved in the construction of achievement test – Blue Print and Question Pattern – Feedback Devices: Meaning, Types, Criteria, Guidance as a Feedback Devices: Assessment of Portfolios, Reflective Journal, Field Engagement using Rubrics, Competency Based Evaluation. Assessment in pedagogy – purpose of assessment –Teaching of Computer Science in school – computer assisted learning – evaluation of Computer-based instruction – automatic assessment of programming assignment –integration of ICT in teaching and learning.

SUGGESTED ACTIVITIES

1. Teacher talk / Invited talk on Foster independent thinking through critical pedagogy.
2. Students' seminar on Bloom's Taxonomy of educational objectives
3. Write an essay on Group controlled Instruction.
4. Teacher talk / Expert talk on Assessment and Evaluation
5. Teacher talk on different types of resource-based learning and role of resource centre.

TEXT BOOKS

1. Edmund J., Amidon; John B Hough; Ned A Flanders (1967)*Interaction analysis: theory, research, and application* Reading, Mass., Addison-Wesley Pub. Co.
2. Goel,H.K (2005) *Teaching of Computer Science* , New Delhi, R.LallBook.Depot.
3. J.C. Aggarwal (2010) *Principles, Methods and Techniques of Teaching*,Vikas Publication House Pvt Ltd.
4. Jesse Stommel ., Chris Friend ., Sean Michael Morris (2020) *Critical Digital Pedagogy: A Collection.*, Hybrid Pedagogy Books.

5. Knowles, M.(1975). *Self-directed learning: A guide for learners and teachers*. USA: Cambridge Adult Education.
6. Mangal S.K (2009) *Essentials of Educational Technology*. PHI Publication.
7. S. K. Kochhar (2018) *Methods and Techniques of Teaching*, Sterling Publishers Pvt. Ltd

SUPPLEMENTARY READINGS

1. ChrystallaMouza , AmanYadav , Anne Ottenbreit-Leftwich (2021) *Preparing Pre-Service Teachers to Teach Computer Science: Models, Practices, and Policies*, Information Age Publishing.
2. Mohanty,L (2006). *ICT Strategies for Schools*. New Delhi.sage Publication.
3. N R SwaroopSaxena , Dr. Navneet Kumar Singh (2016) *Principles and Methods of Teaching*, R.LallBook.Depot.
4. Norton,P(1998). *Introduction to Computers*. New Delhi: Tata McGraw Hill Publishing Co.Ltd.
5. Orit Hazzan, Tami Lapidot, NoaRagonis (2014) *Guide to Teaching Computer Science: An Activity-Based Approach* 2nd Edition, Springer.
6. VinayBharti (Latest Edition) *Pedagogy of Computer Science*, Laxmi Book Depot.

E-RESOURCES

1. <https://www.theedadvocate.org/how-to-implement-critical-pedagogy-into-your-classroom/>
2. <https://mypedagogyofenglish1975.blogspot.com/2020/07/chapter-08-pedagogical-analysis.html?m=1>
3. https://link.springer.com/chapter/10.1007/978-3-642-60968-8_12
4. <https://www.simplypsychology.org/case-study.html>
5. <https://learn-u.com/lesson/resource-based-learning/>

COURSE OUTCOMES

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

- CO1. analyse the concept of Pedagogy, Andragogy and Heutagogy.
- CO2. demonstrate Carl Roger's Non- directive model in a new learning situation.
- CO3. practise activity-based Instruction concept like Role play, simulation, gaming and prioritising.
- CO4. analyse different types of Educational Resources in Classroom learning.
- CO5.construct an achievement test and evaluate computer-based instruction.

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
C01								*													*			
C02		*						*		*														
C03		*			*												*			*				*
C04					*	*		*				*				*		*			*		*	
C05				*																				