M.Ed. DEGREE PROGRAMME

SEMESTER I
CORE COURSE

Course Code: 904.10 ADVANCED METHODOLOGY OF INFORMATION AND COMMUNICATION TECHNOLOGY EDUCATION

COURSE OUTLINE

 Contact Hours : 108   Maximum Weight : 32

Duration of Exam : 3 hrs   No. of Credits : 4

COURSE OBJECTIVES

1. To gain an analytical perspective on different conceptual versions of ICT.

2. To reflect on the psychological bases of instructional transactions of ICT.

3. To develop an efficacious trends over the important methods /techniques of teaching with the help of ICT tools.

4. To internalize the reflections on the use of ICT in latest teaching styles.

5. To frame and evaluate the research trends in teaching Information and Communication Technology (ICT).

Part A: Fundamentals of ICT

UNIT-I: About Information and Communication Technology (9 hrs)

Introduction to ICT, Emergence of ICT   Nature and Scope of ICT with special reference to education – Limitations of ICT

UNIT-II: Fundamentals of Computers   (16 hrs)

Definition of computers- characteristics– History – Generations of Computers – Functional Units of computers – Classification of computers – Functions of computers – components of computer system.

Operating System

Need of an operating system - functions of an operating system – types of operating system

DOS – Windows – Linux

Programming Languages

Data representation.

Data base management

New Trends – Cloud computing, virtual classroom

UNIT-III: Computer Networks   (16 hrs.)

Purpose of computer networks – Types of computer Networks

Local Area Network (LAN)

Metropolitan Area Network (MAN)

Wide Area Network (WAN)

Internet

History of Internet – Internet connection - Modem – Internet protocols – URL – Web Server – Web browser – Firewalls, Search Engines – Portals   - New Trends using Internet – Web TV, E-commerce, E-publishing, E-learning, E-mail, Teleconferencing, New Groups, Video conferencing.

UNIT-IV Data, Information, Knowledge   (9hrs)

Different types of   explosions – Population, Information, expectation, Knowledge etc

Role of IT in the process of acquiring knowledge. Knowledge Construction – Knowledge processing - BPO (Business Process Outsourcing) and Knowledge – Knowledge regeneration

UNIT-V: Psychological Bases of Teaching ICT   (7 hrs)

Individualizing/ Socializing instruction – Scaffolding – Information processing – Metacognition – Artificial Intelligence – learner centered pedagogy

UNIT-VI: Innovative Methods/ Approaches of Teaching ICT (12 hrs)

Programmed Instruction – Methods   - PSI – CAI – CMI – Blended teaching – team teaching – Models of teaching,   Active learning – Collaborative learning – creative learning – Integrative learning – Evaluative learning, Multimedia approach

UNIT-VII: Research trends in teaching ICT   (14 hrs)

Latest R/D in the field of ICT

Incorporating the latest developments in ICT with teaching

ICT and its influence on students, teacher, virtual campuses, higher education, higher education in developing   countries, virtual classroom, smart classroom,   sustainability of ICT enhanced educational programmes. SPSS (Statistical Package of Social Science)

Advance Practicum (Any Two)

1. Develop a unit for secondary class on a selected topic which can be transacted with Computer Mediated Teaching /Learning (CMT/CML).

2. Prepare a lesson Design based on any one modern instructional strategy.

3. Develop a power point presentation to transact a selected content in the concerned optional subject (No. of slides should be at least 20) .

Details of Hours Distribution

Unit 1   9 hrs

Unit 2   16 hrs

Unit 3   16 hrs

Unit 4   9 hrs

Unit 5   7 hrs

Unit 6   12 hrs

Unit 7   14 hrs

Others

a. Orientation on Practicum   - 5 hrs

b. Interacting with Experts   - 5 hrs

c. Practical Work in ICT Devices   - 15 hrs

References:

1. Gangwer, T. (2009). *Visual Impact, Visual Teaching: Using Images to Strengthen Learning* . California: Corwin Press.

2. Richardson, W. (2009). *Blogs, Wikis, Podcasts.* California: Corwin Press.

3. November, A. (2008) *Web Literacy for Education* . USA: Corwin Press.

4. Petrina, S. (2007). *Advanced Teaching Methods for t5he Technology classroom.* America: Information Science Publishing

5. Inoke, Y. (2007). *Technology and Diversity in Higher Education: New Challenges.* London: Information Science Publishing.

6. Rubin, R.B. Rubin, A.M. & Piele, L.J. (2000) *Communication Research: Strategies and Sources* (5th ed.) Canada: Wardsworth.

7. Mike, B. (1999). *Enabling Technology for inclusion* London: Paul Chapman Publishing.

8. Robert, H. Michael, M. and James R. (1998). *Instructional media and the New technologies of Instruction.* New York: macmillan Publishing.

9. Roger, C. (1997). *Managing Information Technology in Secondary Schools.* London: Routledge.

10. Angela, M.F. (1997). *Information Technology and Authentic Learning.* London: Routledge.

11. Loveless (1996). *The Role of IT: practical issues for the Primary Teacher.* London: Cassell.

12. Sharma, R.A. (1993). *Advanced Educational Technology.* Meerut. Loyal Book Depot.

13. Paul, M. Kathy, H. and Marvin, T.N. (1992) *Computer in Education.* Boston: Allyn and Bacon.

14. Trevor, B. (1992). *Training to meet the Technology Challenge.* London: McGraw Hill.

15. Dennis, I. and. Michael, S. (1985). *Macmillan Dictionary of Information Technology.* London: Macmillan Press.

Mahatma Gandhi University

M.Ed. Degree (CBCSS) First Semester Examination

Core Course 904.10 ADVANCED METHODOLOGY OF IT AND COMPUTER SCIENCE EDUCATION

Duration of Exam: 3 hrs.   Max. Weight : 32

Part A

**Answer any two questions.
Each question carries a Weight of 4**

1. Explain the scope of IT in Education.

2. Explain the different innovative methods of teaching IT.

3. How far internet is useful in schools of Kerala.

4. Prepare five slide content and outline for presentation in any selected topic according to your choice.

(2x4=8 weight)

**Part B
Answer any 6 questions in 2 pages.
Each question carries a Weight of 2**

5. Describe the qualities required for an IT teacher.

6. How does programmed learning assist slow learners.

7. What are the new trends using Internet?

8. Differentiate between data and information.

9. What are the research trends in IT education?

10. Differentiate between Windows and Linux OS.

11. What are the features of second generation computers?

12. Explain the importance of computer networks in education

(6x2=12 weight)

**Part C
Answer any 6 questions.
Each question carries a Weight of one**

13. What is team teaching?

14. Name two programming languages that are currently in use in higher secondary schools.
15. What is Firewalls?
16. What is URL? Give example?
17. What is virtual computing?
18. Mention the major components of teleconferencing.
19. Differentiate between CAI and CMI.
20. What is meant by Matacognition?

(6x1=6 weight)

Part D

Answer all the questions. Each question carries ½ weight

21. Give an example for web browser.
22. Name a data base management system.
23. Give an example for WAN
24. What is IP?
25. MODEM stands for
26. What is news groups?
27. What is creative learning?
28. Give an example for a free software.
29. Give the latest version of any programming language.
30. Name any one IT journal.
31. Enlist any two education website.
32. Mention any one current area in IT Research.

(12x ½ - 6 weight)