जोधपुर राष्ट्रीय विश्वविद्यालय
Jodhpur National University

Faculty of Computer Application
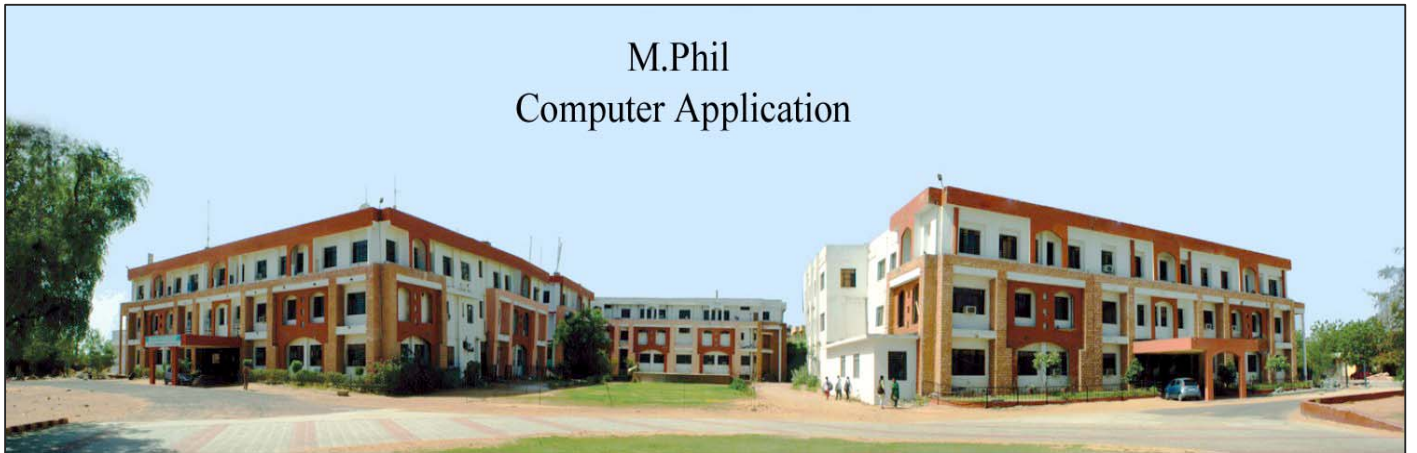
Master of Philosophy (M.Phil)

In

Computer Application

Session-2014

SCHEME OF EXAMINATION
&
DETAILED SYLLABUS

M.Phil
Computer Application

M.Phil Computer Application

Course Objective:

- Develop scholars into mature researchers, able to make original scientific contributions that have both practical significance and a rigorous, elegant theoretical grounding that underpins the various areas of Computer Science and IT.

- To develop sound knowledge in Computer Science & interdisciplinary areas with Science, Technology and Management related to Information Systems and their applications in relevant fields with the latest technologies.

- Motivate and orient youngsters to do research with proper baseline.

- Develop professionals and teachers with strong analytical and synthesizing capability.

- Foster innovative and creative thinking that can instill student community to develop a strong scientific community.

The duration of the program is **one year** (2 Semesters) and the course is carefully designed to attain theoretical, technical and research aspects that enable the candidate to grow into competent, seasoned professionals.

Eligibility:

Qualifying examination/degree for the admission for the M.Phil-CA degree course is M.Sc/MCA/M.Tech in Computer Science/ Information Technology/ Electronics/ Computational Sciences having a minimum of three papers in CS/IT in the qualifying examination with at least 55% marks.

The entry will be through an Entrance Test conducted by the University.

Course Fee:

The course fee for M.Phil. Program is Rs.60, 000/-. The fee is payable in two equal installments of Rs.30, 000/-.

COURSES STRUCTURE OF M.PHIL. (CA)					
Sem.	S.No.	Paper	Marks		Total Marks
			Term End Examination	Internal Assessment (Seminar, Test, Viva)	
I	(1)	Pre-Ph.D. Corse-work, as run by UCR&D	-	-	150
	(2)	1MCS02 Advanced Operating System	100	50	150
	(3)	1MCS03 Advanced Database Systems	100	50	150
	(4)	Dissertation-: i) Introduction & Preliminaries	-	-	-
II	(4)	Dissertation continued ii) Literature Survey iii) Synopsis iv) SCRIPT & Evaluation	- - 150	50 50 -	250
		Total			**700**

Note:-

S.No.1 -- This course will be run by UCR&D, covering Quantitative Methods, Research Methodology & Computer Applications.

S.No.2 & 3 --   These courses will be run by Faculty of Engg. & Tech. as a part of their M.Tech. CSE Program.

S.No.4 -- The dissertation and related activity will be handled by the Faculty of Computer Application.

Detailed Syllabus
Semester- I

Subject Code	Subject	Hrs./Week				Marks		
		L	T	P	Total	Theory Exam/ Viva voce	Internal Assessment	Total
MCS102	Advanced Operating Systems	4	2	-	6	100	50	150
MCS103	Advanced Database Management Systems	4	2	-	6	100	50	150
	Total							

Semester-I & II

Subject Code	Subject	Hrs./Week				Marks		
		L	T	P	Total	Theory Exam/ Viva voce	Internal Assessment	Total
	Dissertation	-	-	-	3	150	100	250
	Total							

Regulations:

1. For a Pass: (i) In each Paper & Viva-Voce   50%

                        (ii) In the aggregate   50%

2. Mark sheet for M.Phi. (CA) shall be issued as per University norms.
   Only Pass / Fail shall be indicated in the final degree / mark-sheet.

MCS102 - ADVANCED OPEARTING SYSTEMS (1MCS02)

4L, 2T   3 Hours, 100 Marks

Distributed Operating System: Issues, limitation, causal and total ordering.

Logical clocks, mutual exclusion classification and algorithms.

Deadlock model, detection, prevention, avoidance, resolution, centralized and distributed detection algorithms.

Distributed file system architecture, design issues, memory coherence, granularity, page replacement. Distributed scheduling

Load distribution, stability, load sharing, task migration

Suggested reference materials:

1. Galvin / Silberschtz : Operating Systems Concepts, TMH
2. Distributed operating System :Tanenbaum
3. Distributed operating systems: concepts and design: Pradeep Kumar Sinha
4. Distributed systems: concepts and design: George Coulouris, Tim kindberg

MCS103 - ADVANCED DATABASE MANAGEMENT SYSTEM(1MCS03)

4L, 2T   3 Hours, 100 Marks

Overview of DBMS, Transaction Management, concurrency control , failure recovery.

Introduction to distributed data base management systems Semantic Database Models and Systems, Relational Extensions: Design Techniques, Extension Techniques.

Object / Relational Systems: Open ODB, Interface, OSQL, Adapter, Case Study of an ORDBMS, Related Development, Current Product Scenario.
Object-Oriented Database Systems : Standard for OODBMS, Products and Applications: ODM – Standards, ODMG, Smalltalk Binding, SQL.

User Defined ADT in SQL, Routines, ADT Subtypes and Inheritance, Tables, Procedural Facilities, Other Type Constructions, GenericADT Packages, Language Bindings.

Suggested reference materials:

1. C S R Prabhu,"Object Oriented Data Base Systems" approaches and Architectures, PHI,
2. F. H. Lochousky, DC Tsichritzis"DBMS" NewYork Academic Press.
3. F. H. Lochousky, DC Tsichritzis"Data Models" PHI.
4. C.J.DATE "Introduction to Data Base to Management System" Addison Wesley.
5. N. Goodman, V. Hadzilacos "Concurrency Control and Recovery in Data Base System" Addison Wesley