ST. JOSEPH'S COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS), CUDDALORE-1

Name of the Department   : P.G. and Research Department of Computer Science

Name of the Course   : M.Phil. (Computer Science)

Minutes:

The meeting of the Board of Studies for M.Phil. (Computer Science) was held at P.G and Research Department of Computer Science, St. Joseph's College of Arts & Science(Autonomous), Cuddalore on 11th February 2018 at 10:00 AM.

Details of the Expert Members in the Board of Studies

S.No.	Category	Name And Official Address	Phone No.& E-Mail ID	Affiliation	Term
1.	Chairman	Mr.M.Arumai Selvam, Head, PG & Research Dept.Of Comp.Science, St.Joseph's College Of Arts & Science (Autonomous), Cuddalore-1.	9443260804 Arumai_selvam@ yahoo.com	Thiruvalluvar University	
2.	University Nominee	Mr. M. Leenus Assistant Professor, Dept.Of Comp.Science, Periyar Arts College, Cuddalore.	9842679614 Leenus2004@ yahoo.com	Thiruvalluvar University	
3.	Subject Expert	Dr.A.Martin Assitant Professor, Dept. Of Comp.Science, School Of Mathematics & Computer Science, Central University Of Tamil Nadu, Thiruvarur-610 101	9500900380 cudmartin@ gmail.com	Central University of Tamil Nadu	
4.	Subject Expert (Industry / Corporate Sector)	**Mr.Mourougane Arumugam M.C.A.,M.Phil** Project Manager Infosys Ltd, Mahindra City Chengalpet District,	9443028207 Mourougone22@ gmail.com		
5.	Alumni Representative	**Mrs.R.Jyothi M.Sc., M.Phil.,** Assistant Professor and Head of the Department PG and Research Department of Computer Applications Krishnaswamy College of Arts and Management for Women Science,Cuddalore	8637633088 Josri7112011@ gmail.com	Thiruvalluvar University	

6.	Member (Internal) M.Phil. (CS)	Dr. R. Vidya Assistant Professor	vidya.sjc@ gmail.com 9443222181	Thiruvalluvar University	
7.		Mrs.T.Miranda Lakshmi, Assistant Professor	cudmiranda@ gmail.com 9600970087	Thiruvalluvar University	
8.		Mrs. M.A. Maria Parimala Assistant Professor	9942481374 Mariaparimala-a@ gmail.com	Thiruvalluvar University	
9.		Mr. A.R. Johnson Durai Assistant Professor	duraiar@ gmail.com 9842548585	Thiruvalluvar University	

The meeting started with a prayer and the expert was formally introduced by the Chairman. The curriculum designed for M.Phil.(Computer Science) was taken for discussion and the members approved the following changes in the syllabus.

No change in **Unit I**. In **unit II** Fuzzy systems, Network Security and Artificial Neural Network were included. In **Unit III** in addition to old syllabus Machine Learning algorithms and deep learning concepts were introduced. **In unit IV** Big data and data analytics and IOT concepts were introduced. In **Unit V** Implementation of Research paper from SCI/Scopus indexed Journals were added.

Finally Dr. R. Vidya gave the Vote of Thanks. The meeting was over by 11.00 A.M.

PG and Research Department of Computer Science
M.Phil Computer Science (Template)
2017-2018

Yr/ Semester	Subject	Code	Part	Subject Title	Hours	Credits
I YEAR/I SEM	CORE	MCS101	I	RESEARCH METHODOLOGY	6	5
	CORE	MCS102B	II	ADVANCED COMPUTER TECHNIQUES	6	5
	CORE		III	ELECTIVE PAPER (Guide Paper)	6	5
	LIBRARY		IV	SCIENCE-6 (LIBRARY)+6(LAB)	12	
				TOTAL	30	**15**
II SEM	CORE		II	DISSERTATION AND VIVA VOICE		21
				GRAND TOTAL		**36**

M.Phil Syllabus
[2018-2019]

M.Phil. CS	Advanced Computer Techniques	
SEMESTER –I		
		HRS/WEEK – 6

Unit- I :
ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS
Definition - Introduction - AI techniques – Heuristic Search Techniques – A* Algorithm – AO* Algorithm - Components of an Expert System - Knowledge Representation and Acquisition Techniques - Building an Expert system.

Unit –II :
FUZZY SYSTEMS
Definition of a Fuzzy set- Fuzzy relations- Fuzzy Functions and Applications of Fuzzy Systems.
NETWORK SECURITY
Introduction – Cryptographic principles-DES, AES and RSA Algorithms- Digital Signature standards.
ARTIFICIAL NEURAL NETWORK
Basic concepts- single layer perception- Multilayer perception- Supervised and unsupervised algorithm- Back propagation networks- Hopfield network.

Unit-III :
DIGITAL IMAGE FUNDAMENTALS AND IMAGE PROCESSING
Introduction – Fundamental steps in Digital Image Processing – Components of an Image Processing System –Basic relationships between pixels – Basic Gray Level Transformation – Histogram Processing. Color Fundamentals – Color Models – Color Transformations – Smoothing and Sharpening – Color Segmentation. Machine learning algorithms and Deep learning concept.

Unit- IV:
BIG DATA AND DATA ANALYTICS
Definition- Character's- Architecture of Big Data- (Best practice for Data Integration in a Big Data World) Fundamentals of Big Data world Integration – Defining Traditional ETL- Using Hadoop as ETL
IOT: Internet of Things Strategic Research and Innovation Agenda - Scalable Integration Framework for Heterogeneous Smart Objects Applications and Services - Internet of Things Application - From Research and Innovation to Market Deployment.

Unit V:-PAPER PRESENTATION
a) At least one paper should be published in National/International conference-

b) Implementation of Research paper from IEEE/SCI Indexed /Scopus Indexed Journal.

<u>REFFERENCES</u>

<u>Unit I&II</u>
1. Nils J. Nilsson – "**Principles of Artificial Intelligence**" – Narosa Publishing House.
2. Elaine Rich, Kevin Knight – **Artificial Intelligence** – 2nd Edition – TMG.
3. George J. Klir, Tina A. Folger – **Fuzzy sets, Uncertainity and Information** – PHI
4. S. Ramani, R. Chandrasekar and K. S. R. Anjaneyulu – **Knowledge based Computer Systems** – Narosa Publishing House.
5. Doanald A Waterman – **A Guide to Expert Systems** – Addison Wesley.
6. Andrew S.Tanenbaum "Computer Networks" –Pearson Education- 4th Edition New Delhi -2003
7. William Stallings- Cryptography and Network Security- Pearson Education- New Delhi- 2006
8. Laurence Fdusett- Fundamentals of Neural Networks" – Prentice Hall- 1994

<u>Unit III</u>
1. R. Gonzalez and R. E. Wood – **Digital Image Processing** – Prentice Hall of India, New Delhi, 2002.
2. A. Rosenfeld and A. C. Kak – **Digital Picture Processing** - Prentice Hall of India, New Delhi, 1982.
3. W. K. Pratt – **Digital Image Processing** – MC Graw Hill, New Delhi, 1981.
4. Machine learning algorithms
5. Deep learning

<u>Unit IV</u>
1. Hrishikesh Karambelkar **Scaling Big Data with Hadoop and Solr** – Packt Publishing
2. AnanthGrama – **Introduction to parallel computing** – Second Edition – Pearson Edition 2003
3. Ovidiu Vermesan & Peter Friess - Internet Of Things – From Research and Innovation to Market Deployment. - River Publishers

<u>Unit-V</u>
1. E-books
2. National and international Journals
3. SCI Indexed Journal & Scopus Indexed journal and IEEE papers.

M.Phil. Computer Science	RESEARCH METHODOLOGY For the students admitted from the year 2018	MCS101
I SEMESTER		HRS/WEEK – 5

Unit – I

Meaning of research – Objectives of research – motivation of research - types, approaches and significance- Methods versus methodology – research in scientific methods - research process – criteria for good research – problems encountered by researchers in India – Funding agencies.

Unit – II

Research problems: selecting the problem - necessity of defining the problem - techniques involved in defining a problem. Research design – needs and features of good design – Different research design – basic principles of experimental designs.

Unit – III

Data collection methods – data types – processing of data ,techniques of ordering data – meaning of primary and secondary data - Uses of computers in research – the library and internet . Uses of search engines – virtual libraries – common software for documentation presentation.

Unit – IV

Statistical analysis of data – standard deviation – Correlation. Tests of Significance (small samples) based on t and F distributions with respect to mean, variance and correlation coefficient. Chi–Square distribution: Test for independence of attributes. Analysis of Variance: One way and two way classifications.

Unit –V

Meaning of research report – logical format for writing thesis and paper – essential of scientific report abstract , introduction review of literature, materials and methods and discussion – write up steps in drafting report – effective illustrations, tables and figures - reference styles : Harvard ,IEEE and Vancouver systems .

REFERENCE BOOKS:
1. Research Methodology ,Methods and techniques - C.R.Kothari &Gaurav Garg New Age International Publishers ,III Edition.
2. Research Methodology – R.Paneerselvam , II Edition.
3. Research Methodology ,A step by step Guide for Beginners – Ranjit Kumar , II Edition.
4. Statistical methods – S.P.Gupta , Sultan Chand & Sons ,32nd edition.