

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR – 639 005

M.Phil Computer Science

PROGRAMME OUTCOMES

- The Master of philosophy in Computer Science is aimed to develop scholars into developed researchers and make them to gear technical issues prevailing in the competitive world of Computer Science and Information Technology.
- The scholars gain an insight in concerned specialization and builds innovative capabilities to solve problems.
- This course provides a capacity to learn continually and interact with trans-disciplinary groups.
- Deep understanding of the recent trends in the computer science industry.
- As a culmination of the program the scholars shall publish their research papers in an international conferences, seminars and journals etc.
- The usefulness of an M.Phil depends on the amount of research beyond coursework done as undergraduate. It used to enhance an application to PhD.

PROGRAMME SPECIFIC OUTCOMES

- To be globally recognized college where learners are nurtured in a scholarly environment to evolve into competent professionals and researchers to benefit society.
- Evolve a curriculum which emphasizes on strong fundamentals with the flexibility to choose advanced courses of interest and gain exposure to tools and techniques in contemporary subjects.
- To effectuate supremacy in technical education through articulation of research and industry practices for social relevance.
- To inculcate the habit of lifelong learning.
- To exhibit professional ethics commitment and leadership qualities.
- To impart the right proportion of knowledge, attitudes and ethics in students to enable them take up positions of responsibility in the society and make significant contributions.
- Help to prepare educational professionals recognized for the quality and significance of their teaching, research, scholarship, service, outreach and leadership.
- Provide widely recognized leadership in the improvement of teaching, learning and the assessment of educational outcomes across the life span through research scholarship and technology.

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR – 639 005

M.Phil., COMPUTER SCIENCE COURSE STRUCTURE UNDER CBCS SYSTEM

(For the candidates admitted from the year 2012-13 onwards)

SEMESTER	COURSE	SUBJECT TITLE	SUBJECT CODE	INSTR. HOURS WEEK	CREDIT	EXAM HOURS	MARKS		TOTAL
							INT	ESE	
I	Core Course – I	Research Methodology	12MCS1	--	4	3	40	60	100
	Core Course – II	Advanced Paper in Computer Science	12MCS2	--	4	3	40	60	100
	Core Course – III	Paper on topic of Research (To be framed by Guide)*	12MCS3A	--	4	3	40	60	100
	Core Course – IV	Teaching and Learning Skills (Common Paper)	12MCS4	--	4	3	40	60	100
II	Dissertation	Viva voce – 50 marks Dissertation – 150 marks	12MCSPW	--	8	--	--	--	200
	TOTAL				--	24			600

Note:* For Course III the syllabus will be framed by the Guide and the Examination will be conducted by the Controller of Examinations.

Allocation of Marks:

Component	Maximum	Passing Minimum
Internal	40	20
End Semester Examinations	60	30
Project Work – Viva Voce	50	25
Project Work – Dissertation	150	75

Component for Internal:

2 Tests = 2x10 = 20 Marks; Term Paper – 10 Marks; and Seminar – 10 Marks

Question Paper Pattern:

5 Questions – Either or Type – 5x12 = 60 Marks

**CHAIRMAN
BOARD OF STUDIES IN COMPUTER SCIENCE**

CONTROLLER OF EXAMINATIONS

Sl. No.:

Subject Code:

12MCS1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR -05

M.Phil., COMPUTER SCIENCE – I SEMESTER – CORE COURSE -I

(For the candidates admitted from the year 2012-13 onwards)

RESEARCH METHODOLOGY

- This paper supports the researchers to educate how to get nearer the research result findings
- Research methodology is a way through which researchers need to carry out their research.
- In this paper researchers to know how formulate their problem and objective.

Unit I

Thesis Writing: Research types – objectives and approaches – Literature collection, Web browsing – Software tools – Writing review and journal articles – manuscript publication Planning a thesis – general format – page and chapter format – footnotes – tables and figures – references and appendices

Unit II

Analysis of algorithm: The role of algorithm in computing – Insertion sort – Analyzing and designing algorithms – growth of functions – introduction to NP – completeness

Unit III

Formal Languages and Finite Automata: Context free grammars – Derivation trees – Simplification of context free Grammars – Chomsky normal form – Greiback normal form – The pumping lemma for context free languages

Finite state systems – Basic definitions – Non deterministic finite automata – Finite automata with epsilon moves – Regular expressions – Applications of finite Automata (Stress on theorem statement and problems only, no proof for theorems)

Unit IV

Probability and Statistical Analysis: Probability – Fail time data analysis – Hazard models – Conditional probability – Bayes rule – System reliability – Stochastic process

Unit V

Logics – Relations and Functions: Propositions – Precedence rules for operators – Laws of equivalence – Natural deduction system – Developing natural deduction system proofs Relation properties – Matrix and Graph – Graph Notations for relations – Partition and covering – Equivalence relation – Compatibility relations – Partial ordering – Functions – Components – Composition of function – Inverse functions – Binary and n-ary operations

Text Books:

1. Kothari C. R. Research Methodology – methods and techniques, 2nd Edition, Wishwa Prakashjan New Delhi 1999.
2. Elis Horowitz and Sartaj Sahni, „Fundamentals of Computer algorithms“, Galgotia Publications, New Delhi 2000.
3. John E. Hopcroft, Jeffery D. Ullman, „Introduction to Automata Theory Language and Computation“, narosa Publishing House, 1979.
4. L.S. Srinath, „Reliability Engineering“, Third Edition, Affiliated East, West press pvt.Ltd, New Delhi, 2005
5. David Gries, „The Science of Programming“ Narosa Publishing House, 1981

Reference Books:

1. Berny H. Durston, M. Poole, „Thesis and Assignment writing“, Wiley Eastern Ltd. ND 1970
2. Misra R.P. Research Methodology – A Hand Book, Concept publishing Company, New Delhi 1988
3. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest „Introduction to Algorithms“, Prentice Hall of India, 1998
4. E. Balagurusamy, „Reliability Engineering“, Tata Mc Graw Hill Publishing Ltd., New Delhi 2003
5. Leon S. Levy,; Discrete structures of Computer Science“, Wiley Eastern Ltd., 1980 .

CHAIRMAN

BOARD OF STUDIES IN COMPUTER SCIENCE

CONTROLLER OF EXAMINATIONS

Sl. No.:

Subject Code:

12MCS2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR -05

M.Phil., COMPUTER SCIENCE – I SEMESTER – CORE COURSE -II

(For the candidates admitted from the year 2012-13 onwards)

ADVANCE PAPER IN COMPUTER SCIENCE

- Researchers need to know the prevention of future attacks in up-to-date social data.
- This paper supports to combine a mixture of technologies and solutions that move us nearer to the final goal.
- This paper educates the researchers how the memory is shared to swap the information between processors.

Unit I

Security problems in Computing – Cryptography – program security – Database security – Security in Networks.

Unit II

Grid Computing organization and their role – Grid computing anatomy – Merging the Grid service architecture with web services architecture.

Unit III

Fundamental – Remote procedure cells – Distributed shared memory – Synchronization.

Unit IV

Distributed Databases – Homogeneous and Heterogeneous databases – Distributed data storage – distributed transactions – commit protocols – concurrent control – availability – Distributed theory processing Heterogeneous distributed databases – Directory systems.

Unit V

Fundamentals of Parallel processing – MIMD computers or Multiprocessor 4.1 – 4.2, 4.3.

Text Books:

1. Chapter 1,2,3,6 & 7 – (Security in Computing, Charles P. Pfleeger, & Shani Lawrence Pfleeger)
2. Joshy Joseph, Graig Felenstern „Grid Computing” – Pearsons 2004
3. Distributed file systems, Chapter 1,4,5,6 & 9 Distributed Operating Systems, Pradeep K. Sinha, PHI, 2004
4. Abraham fiberschatz & Hendry F. Korths “Data base systems concepts” Mc Graw Hill International fifth edition, 2006
5. Distributed memory multiprocessors 5.1, 5.2, 5.3, 5.4, 5.5
Data dependence and parallelism – 7.1 – 7.2, 7.3, 7.4, 7.5
Implementing synchronization and data sharing 8.1, 8.2, 8.3, 8.4
Harry F. Jordan Gita Alaghband

Sl. No.:

Subject Code:

12MCS4

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR -05

M.Phil., COMPUTER SCIENCE – I SEMESTER – CORE COURSE -IV

(For the candidates admitted from the year 2012-13 onwards)

TEACHING AND LEARNING SKILLS

Objectives:

After completing the course, scholars will be able to:

- Acquaint different parts of computer system and their functions
- Understand the operations and use of computers and common accessories
- Develop skills of ICT and apply them in teaching learning context and Research
- Appreciate the role of ICT in teaching, learning and Research
- Acquire the knowledge of communication skill with special reference to its elements, types, development and styles
- Understand the terms communication Technology and Computer mediated teaching and develop multimedia/E-content in their respective subject
- Understand the communication process through the web
- Acquire the knowledge of instructional

Unit I: Computer Applications Skills

Computer System: Characteristics, Parts and their functions - Different generations of computer – Operation of Computer: switching on/off/restart. Mouse control, Use of key board and some functions of key – Information and Communication Technology (ICT): Definition, Meaning, Features, Trends – Integration of ICT in teaching and learning – ICT applications: Using word processors, Spread sheets, Power point slides in the classroom – ICT for Research: On-line journals, e-books, Courseware, Tutorials, Technical reports, Theses and Dissertations.

Unit II: Communication Skills

Communication Definitions – Elements of Communication: Sender, Message, Channel, Receiver, Feedback and Noise – Types of Communication: Spoken and Written: Non-verbal Communication – Intrapersonal, Interpersonal, Group and Mass communication – Barriers to communication: Mechanical, Physical, Linguistic & Cultural – Skills of Communication: Listening, Speaking, Reading and writing – Methods of developing fluency in oral and written communication – Style, Diction and Vocabulary – Classroom communication and dynamics.

Unit III: Communication Technology

Communication Technology: Bases, Trends and Developments – Skills of using Communication Technology – Computer Mediated Teaching Multimedia, E – content – Satellite – based communication: EDUSAT and ETV Channels. Communication through web: Audio and Video applications on the internet, interpersonal communication through the web.

Unit IV: Pedagogy

Instructional Technology: Definition, Objectives and Types – Difference between Teaching and Instruction – Lecture Technique: Steps, Planning of a Lecture, Delivery of a Lecture – Narration in tune with the nature of different disciplines – Lecture with power point presentation – Versatility of Lecture technique – Demonstration: Characteristics, Principles, Planning Implementation and Evaluation – Teaching – learning Techniques: Team Teaching, Group discussion, Seminar, Workshop, Symposium and Panel Discussion – Modes of teaching: CAI, CMI and WBI

Unit V: Teaching Skills

Teaching Skill: Definition, Meaning and Nature: Types of Teaching skills: Skill of Set induction, Skill of Stimulus Variation, Skill of Explaining, Skill of Probing Questions, Skill of Black Board Writing and Skill of Closure – Integration of Teaching Skills – Evaluation of Teaching Skills.

References:

1. Bela Rani Sharma (2007), Curriculum Reforms and Teaching Methods, Sarup and sons, New Delhi.
2. Don Skinner (2005), Teaching Training, Edinburgh University Press Ltd, Edinburgh
3. Information and Communication Technology in Education: A Curriculum for schools and programme of Teacher development, Jonathan Anderson and Tom Van Weert, UNESCO, 2002
4. Kumar, KL (2008) Educational Technology, New Age International Publishers, New Delhi
5. Mangal, S.K. (2002) Essential of Teaching – Learning and Information Technology, Tandon Publications, Ludhiana
6. Michael, D and William (2000), Integrating Technology into Teaching and Learning: Concepts and Applications, Prentice Hall, New York
7. Pandey, S.K (2005) Teaching Communication, Commonwealth Publishers, New Delhi
8. Ram Babu, A and Dandapani, S (2006), Microteaching (vol. 1 &2), Neelkammal Publications, Hyderabad
9. Singh V.K. and Sudarshan, K.N. (1996) Computer Education, Discovery Publishing Company, New York
10. Sharma, R.A. (2006) Fundamentals of Educational Technology, Surya Publications, Meerut
11. Vanaja, M. and Rajasekar, S (2006), Computer Education, Neelkamal Publications, Hyderabad.