MCA-501 Object Oriented Software Engineering


MCA-502 Analysis and Design of Algorithms


MCA-503 Wireless Technologies

MCA-504 Bio-Informatics

MCA-505 Geo-Informatics
Basic concepts about Spatial information, Definition, Historical evolution and need for spatially based resource information system, objectives of GIS - Manual v/s automated GIS. Data structure types of data structure, Raster and Vector formats, advantages and disadvantages of various data structures and data formats. Data input: data pre-processing, methods of data capture, digitization and scanning methods, commonly used map projections and ellipsoids. The format of GIS - Handling digital Geographical Information Data - Analysis of single data planes in Raster format - Analysis of Multiple data planes in Raster format - Uses of topographic data in Raster format - Data structures for thematic maps. Digital Elevation Model (DEM): need, methods, data sources and products of DEM - Digital Terrain Modeling (DTM) - Input verification, storage and methods of data analysis for Spatial modeling - Methods of GIS and Spatial interpolation

MCA-506 Information Protection and Security
MCA-507 Embedded Systems

MCA-508 ERP Systems

MCA-509 Soft Computing
Overview of Crisp sets and fuzzy sets: Basic concepts of crisp sets and fuzzy sets, Basic types of fuzzy sets, Fuzzy sets versus crisp sets, Representation and extension


Computer Implementation of A Genetic Algorithm: Data Structures, Reproduction, Crossover, and mutation, A Time to reproduce, a time to cross, Get with the main program, How well does it work?, Mapping objective functions to fitness form, Fitness scaling, Codings, A multiparameter, Mapped, Fixed-Point coding, Discretization, Constraints.

Introduction To Genetic-Based Machine Learning: Genetics-Based machine learning: whence it came, What is a classifier system?, Rule and message system, Apportionment of credit: The bucket brigade, Genetic algorithm, A simple classifier system in Pascal, Results using the simple classifier system.

MCA-601 Industrial Project:

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Guidelines:

1. Paper MCA-104, Exercises must be carried out in Linux environments.
2. Paper MCA-457, At least one case study of an industry standard software must be carried out along with one system design project. This will be a group activity having maximum of 3 students.
3. Paper MCA-551 will be a group activity having maximum of 3 students.
4. Paper MCA-554 will be individual activity in which student has to prepare and present a seminar along with report on some latest topic related with information technology.