

VIVA Institute of Technology

COURSE OUTCOMES FOR ACADEMIC YEAR 2020-21



Late Shri. Vishnu Waman Thakur Charitable Trust's

VIVA Institute of Technology

(Approved By AICTE New Delhi, DTE and Affiliated to University of Mumbai)

At. Shirgaon, Veer Sawarkar road, Virar (East) Tal - Vasai, Dist. - Palghar, Maharashtra (401305).
Tel.:777 000 2544 Website : www.vivamca.org / Email : contact@vivamca.org

Semester I



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Department of Master of Computer Applications (MCA)

Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	I
Course No.	MCA11		
Course Name	Mathematical Foundation for Computer Science 1		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Apply different statistical measures on various types of data
CO 2	Evaluate using regression analysis.
CO 3	Analyse different types of Probability and their fundamental applications and random variable.
CO 4	Apply probability distribution to real world problems
CO 5	Formulate and test the hypothesis for business problem using various methods



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Department of Master of Computer Applications (MCA)

Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	I
Course No.	MCA12		
Course Name	Advanced Java		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Demonstrate use of data structure and data manipulation concept using Java Collection Framework and Lambda expressions.
CO 2	Create JSP using standard actions, custom tags, Introduction to JSP Standard Tag Library (JSTL) and JSTL Tags.
CO 3	Understand and develop applications using Spring Framework, Lightweight Container and Dependency Injection with Spring.
CO 4	Develop applications using Aspect Oriented Programming with Spring.
CO 5	Apply JDBC Data Access with Spring and demonstrate Data access operations with Jdbc Template and Spring.
CO 6	Create Spring Boot Web Application and Spring Boot RESTful Web Services.



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Department of Master of Computer Applications (MCA)

Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	I
Course No.	MCA13		
Course Name	Advanced Database Management System		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Demonstrate complex database systems like parallel, distributed & object-oriented databases
CO 2	Model data warehouse with ETL process and dimensional modelling and data analysis using OLAP operations.
CO 3	Discover association among items using Association rule mining.
CO 4	Evaluate different data mining techniques like classification, prediction, clustering, web and text mining to solve real world problems.



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Department of Master of Computer Applications (MCA)

Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	I
Course No.	MCA14		
Course Name	Software Project Management		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Define the key concepts of Software Project Management.
CO 2	Demonstrate understanding of the requirements Analysis and Application of UML Models.
CO 3	Make use of estimation logic for estimation of software size as well as cost of software.
CO 4	Examine the need of change management during software development as well as application of quality tools.
CO 5	Assess various factors influencing project management, quality assurance and risk assessment.
CO 6	Develop process for successful quality project delivery.



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Department of Master of Computer Applications (MCA)

Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	I
Course No.	MCAL11		
Course Name	Data Structures Lab using C/C++		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Implement searching and sorting algorithms
CO 2	Implement linear and non-linear data structures
CO 3	Choose the appropriate data structures to solve complex real life problems
CO 4	Analyse hashing techniques for data storage and retrieval



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Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	I
Course No.	MCAL12		
Course Name	Advanced Java Lab		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Demonstrate use of data structure and data manipulation concept using Java Collection Framework and Lambda expressions.
CO 2	Build JSP web application using standard actions, custom tags and JSTL Tags.
CO 3	Develop application using Spring Framework, Lightweight Containers and Dependency Injection with Spring.
CO 4	Develop applications using Aspect Oriented Programming with Spring.
CO 5	Build JDBC application with Spring using JdbcTemplate.
CO 6	Develop Spring Boot Web Application and Spring Boot RESTful web services.



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Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	I
Course No.	MCAL13		
Course Name	Advanced Database Management System Lab		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Demonstrate distributed and ORDBMS concepts
CO 2	Perform ETL operations used in the building data warehouse.
CO 3	Demonstrate and analysis various OLAP operations.
CO 4	Implement and evaluate different data mining techniques like classification, prediction, clustering and association rule mining in R



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Programme Name	First Year MCA	Semester	I
Course No.	MCAL14		
Course Name	Web Technologies		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Build simple websites making use of various Node.js features
CO 2	Design a dynamic web application enabled with database connectivity
CO 3	Use the fundamentals of Angular.js Filters, Directives and Controllers to build applications
CO 4	Develop Forms and Single page applications (SPA)



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Semester II



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Department of Master of Computer Applications (MCA)

Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	II
Course No.	MCA21		
Course Name	Mathematical Foundation for Computer Science 2		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Formulate mathematical model for a broad range of problems in business and industry.
CO 2	Apply mathematics and mathematical modelling to forecast implications of various choices in real world problems
CO 3	Think strategically and decide the optimum alternative from various available options
CO 4	Evaluate performance parameters of a real system using various methods



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Academic Year 2020 – 21

Programme Name	First Year MCA	Semester	II
Course No.	MCA22		
Course Name	Artificial Intelligence and Machine Learning		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Interpret Artificial Intelligence concepts intelligence concepts
CO 2	Apply Artificial intelligence techniques for problem solving
CO 3	Analyse the fundamentals of machine learning, the learning algorithms and the paradigms of supervised and un-supervised learning
CO 4	Identify methods to improve machine learning results for better predictive performance



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Programme Name	First Year MCA	Semester	II
Course No.	MCAL23		
Course Name	Information Security		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Discuss the requirement of information security, private and public key algorithms and to examine the mathematics of cryptography
CO 2	Analyze authentication and integrity techniques available
CO 3	Interpret the importance of firewalls and intrusion detection systems and signatures.
CO 4	Relate to the security issues and technologies used in the web, internet, database and operating system



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Programme Name	First Year MCA	Semester	II
Course No.	MCAL24		
Course Name	Image Processing		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Explain the fundamental concepts of a digital image processing System
CO 2	Apply techniques for enhancing digital images
CO 3	Examine the use of Fourier transforms for image processing in the frequency domain
CO 4	Compare various Image compression standards and morphological Operation
CO 5	Identify various Applications of Image Processing



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Elective 1

Sr. No.	Course Code	Course Name	Lab Course Code
1	MCAE241	Image Processing	MCALE231
2	MCAE242	Internet Of Things	MCALE232
3	MCAE243	Robotic Process Automation	MCALE233
4	MCAE244	Computer Vision	MCALE234
5	MCAE245	Embedded Systems	MCALE235

Note: Students can [view](#) the University of Mumbai Syllabus for more details.



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Academic Year 2020 – 21

Elective 1

Sr. No.	Course Code	Course Name
1	MCAE251	Natural Language Processing
2	MCAE252	Geographic Information System
3	MCAE253	Design and Analysis of Algorithm
4	MCAE254	Digital Marketing and Business Analytics
5	MCAE255	Research Methodology

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Semester III



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Academic Year 2020 – 21

Programme Name	Second Year MCA	Semester	III
Course No.	MCA31		
Course Name	Big Data Analytics and Visualization		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Demonstrate the key issues in big data management and its associated application for business decision
CO 2	Develop problem solving and critical thinking skills in fundamental enabling techniques like Map Reduce, NoSQL, Hadoop Ecosystem
CO 3	Use of RDD and Data Frame to create Application in Spark.
CO 4	Implement exploratory data analysis using visualization



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Academic Year 2020 – 21

Programme Name	Second Year MCA	Semester	III
Course No.	MCA32		
Course Name	Distributed System and Cloud Computing		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Illustrate principles and communication protocols of Distributed systems
CO 2	Analyse clock synchronization and various algorithms
CO 3	Analyse Distributed shared memory and management concepts.
CO 4	Analyze Cloud computing and cloud models



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Programme Name	Second Year MCA	Semester	III
Course No.	MCA33		
Course Name	Block Chain		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Explain Blockchain technologies and their components.
CO 2	Interpret the uses of cryptographic techniques in Blockchain
CO 3	Demonstrate the use of Hyperledger fabric and its components
CO 4	Build the smart contracts in Ethereum
CO 5	Analyse the use of Blockchain technology in various domains



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Programme Name	Second Year MCA	Semester	III
Course No.	MCA32		
Course Name	Distributed System and Cloud Computing		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Illustrate principles and communication protocols of Distributed systems
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Elective 3

Sr. No.	Course Code	Course Name	Lab Course Code
1	MCAE331	Blockchain	MCALE331
2	MCAE332	Deep Learning	MCALE332
3	MCAE333	Game Development	MCALE333
4	MCAE334	Ethical Hacking	MCALE334
5	MCAE335	Quantum Computing	MCALE335

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<u>Elective 4</u>		
Sr. No.	Course Code	Course Name
1	MCAE341	Intellectual Property Rights
2	MCAE342	Green Computing
3	MCAE343	Management Information System
4	MCAE344	Cyber Security and Digital Forensics
5	MCAE345	Entrepreneurship Management

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Semester IV



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Programme Name	Second Year MCA	Semester	IV
Course No.	MCAI41		
Course Name	Internship		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Demonstrate skills to use modern tools, software and equipment to analyze problems.
CO 2	Develop an exposure to real life organizational and environmental situations.
CO 3	Apply SDLC phases in developing software projects and in writing the project document.
CO 4	Create computing solutions for the real-life problems as per the requirements of the domain.
CO 5	Adapt professional and interpersonal ethics.



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Programme Name	Second Year MCA	Semester	IV
Course No.	MCAR42		
Course Name	Research Paper		

Course Outcomes

At the End of the course student will be able to:	
CO 1	Show data coherently, effectively and counter-hypothesis. or presentation.
CO 2	Apply experience in preparation of research material for publication
CO 3	Identify relevant previous work that supports their research.
CO 4	Analyze data and synthesize research findings.
CO 5	Create research paper.



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Programme Name	Second Year MCA	Semester	IV
Course No.	MCAM43		
Course Name	Online Course – MOOC		

Programme Name	Second Year MCA	Semester	IV
Course No.	MCAS44		
Course Name	Institute Social Responsibility (ISR)		