

### M.Sc.I.T. Part-I (SEM I)

S.N.	Learning Objectives	Learning Outcomes
<b>Research in Computing</b>		
1.	To be able to conduct business research with an understanding of all the latest theories.	solve real world problems with scientific approach
2.	To develop the ability to explore research techniques used for solving any real world or innovate problem.	develop analytical skills by applying scientific methods.
3.		recognize, understand and apply the language, theory and models of the field of business analytics
4.		foster an ability to critically analyze, synthesize and solve complex unstructured business problems
		understand and critically apply the concepts and methods of business analytics
		identify, model and solve decision problems in different settings
		interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity
		create viable solutions to decision making problems
<b>Data Science</b>		
1.	Develop in depth understanding of the key technologies in data science and business analytics: data mining, machine learning, visualization techniques, predictive modeling, and statistics.	Apply quantitative modeling and data analysis techniques to the solution of real world business problems, communicate findings, and effectively present results using data visualization techniques.

2.	Practice problem analysis and decision-making.	Recognize and analyze ethical issues in business related to intellectual property, data security, integrity, and privacy.
3	Gain practical, hands-on experience with statistics programming languages and big data tools through coursework and applied research experiences. □	Apply ethical practices in everyday business activities and make well-reasoned ethical business and data management decisions.
4		Demonstrate knowledge of statistical data analysis techniques utilized in business decision making.
5		Apply principles of Data Science to the analysis of business problems.
6		Use data mining software to solve real-world problems.
7		Employ cutting edge tools and technologies to analyze Big Data.
8		Apply algorithms to build machine intelligence.
9		Demonstrate use of team work, leadership skills, decision making and organization theory

### **Cloud Computing**

1.	To learn how to use Cloud Services.	Analyze the Cloud computing setup with its vulnerabilities and applications using different architectures.
2.	To implement Task Scheduling algorithms	Design different workflows according to requirements and apply map reduce programming model.
3	Apply Map-Reduce concept to applications	Apply and design suitable Virtualization concept, Cloud Resource Management and design scheduling algorithms.
4	To build Private Cloud	Create combinatorial auctions for cloud resources and design scheduling algorithms for computing clouds
5	Broadly educate to know the impact of engineering on legal and societal issues involved.	Assess cloud Storage systems and Cloud security, the risks involved, its impact and develop cloud application
6	To implement Virtualization	Broadly educate to know the impact of engineering on legal and societal issues involved in addressing the security issues of cloud computing

### **Soft Computing Techniques**

1	Soft computing concepts like fuzzy logic, neural networks and genetic algorithm, where Artificial Intelligence is mother	Identify and describe soft computing techniques and their roles in building intelligent machines
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	branch of all.	
2	All these techniques will be more effective to solve the problem efficiently	Recognize the feasibility of applying a soft computing methodology for a particular problem
3		Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems
4		Apply genetic algorithms to combinatorial optimization problems
5		Apply neural networks for classification and regression problems
6		Effectively use existing software tools to solve real problems using a soft computing approach
7		Evaluate and compare solutions by various soft computing approaches for a given problem.

### M.Sc.I.T. Part-I (SEM II)

S.N.	Learning Objectives	Learning Outcomes
<b>BigData Analytics</b>		
1.	To provide an overview of an exciting growing field of big data analytics.	Understand the key issues in big data management and its associated applications in intelligent business and scientific computing.
2.	To introduce the tools required to manage and analyze big data like Hadoop, NoSql MapReduce.	Acquire fundamental enabling techniques and scalable algorithms like Hadoop, Map Reduce and NO SQL in big data analytics.
3.	To teach the fundamental techniques and principles in achieving big data analytics with scalability and streaming capability.	Interpret business models and scientific computing paradigms, and apply software tools for big data analytics.
4.	To enable students to have skills that will help them to solve complex real- world problems in for decision support.	Achieve adequate perspectives of big data analytics in various applications like recommender systems, social media applications etc.
<b>Modern Networking</b>		
1.	To understand the state-of-the-art in network protocols, architectures and applications.	Demonstrate in-depth knowledge in the area of Computer Networking.
2.	Analyze existing network protocols and networks.	To demonstrate scholarship of knowledge through performing in a group to identify, formulate and solve a problem related to Computer Networks
3	Develop new protocols in networking	Prepare a technical document for the identified Networking System Conducting experiments to analyze the identified research work in building Computer Networks
4	To understand how networking research is done	
5	To investigate novel ideas in the area of Networking via term-long research projects	
<b>Microservice Architecture</b>		
1	Gain a thorough understanding of the philosophy and architecture of Web	Develop web applications using Model View Control.

	applications using ASP.NET Core MVC	
2	Gain a practical understanding of .NET Core	Create MVC Models and write code that implements business logic within Model methods, properties, and events
3	Acquire a working knowledge of Web application development using ASP.NET Core MVC 6 and Visual Studio	Create Views in an MVC application that display and edit data and interact with Models and Controllers
4	Persist data with XML Serialization and ADO.NET with SQL Server	Boost your hire ability through innovative and independent learning
5	Create HTTP services using ASP.NET Core Web API	Gaining a thorough understanding of the philosophy and architecture of .NET Core
6	Deploy ASP.NET Core MVC applications to the Windows Azure cloud.	Understanding packages, metapackages and frameworks
7		Acquiring a working knowledge of the .NET programming model
		Implementing multi-threading effectively in .NET
<b>Image Processing</b>		
1	Review the fundamental concepts of a digital image processing system.	Understand the relevant aspects of digital image representation and their practical implications.
2	Analyze images in the frequency domain using various transforms.	Have the ability to design pointwise intensity transformations to meet stated specifications.
3	Evaluate the techniques for image enhancement and image restoration.	Understand 2-D convolution, the 2-D DFT, and have the ability to design systems using these concepts.
4	Categorize various compression techniques.	Have a command of basic image restoration techniques.
5	Interpret Image compression standards.	Understand the role of alternative color spaces, and the design requirements leading to choices of color space.
6	Interpret image segmentation and representation techniques.	Appreciate the utility of wavelet decompositions and their role in image processing systems.
7		Have an understanding of the underlying mechanisms of image compression, and the ability to design systems using standard algorithms to meet design specifications.