K. L. E. Society's

अत्तदीपभव

SCIENCE AND COMMERCE COLLEGE

(Affiliated to University of Mumbai)

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Department of Information Technology

M.Sc(Information Technology) with Artificial Intelligence

Program Outcome(POs)

PO1: Knowledge:- Learners will apply the knowledge of information technology fundamentals and its specialization to the solution of complex problems in real world

PO2: Skills:-Students will develop their IT skills, have a better understanding of global issues, and be introduced to innovative directions in Information Technology

PO3: Modern Tools Usage:- With an awareness of the constraints, develop, pick, and apply appropriate methods, resources, and contemporary engineering and IT technologies

PO4:Creativity & Analysis:- Design, develop, and test software systems for a vast computer network to provide solutions for problems in the real world.

PO5:Communication:-
Students will develop their personalities as well as their managerial, research, analytical, and commercial skills via the study of both theoretical and practical information technology topics.

PO6:Ethics & Environment:-
Students will receive training in social responsibility and leadership with an emphasis on the environment and sustainability.

PO7:Individual & Team Work :- Be able to work well in varied teams as a member or a leader and be capable of handling multidisciplinary assignments.

PO8:Self-directed and Life-Long learning:- Recognize the need of continuing your education throughout your life in order to stay current with advances in information technology.

Programme Specific Outcomes (PSO)

PSO-1	Ability to apply the knowledge of Information Technology with recent trends aligned with research and industry.
PSO-2	Ability to apply IT in the field of Computational Research, Soft Computing, Big Data Analytics, Data Science, Image Processing, Artificial Intelligence, Networking and Cloud Computing.
PSO-3	Ability to provide socially acceptable technical solutions in the domains of Information Security, Machine Learning, Internet of Things and Embedded System, Infrastructure Services as specializations.
PSO-4	Ability to apply the knowledge of Intellectual Property Rights, Cyber Laws and Cyber Forensics and various standards in interest of National Security and Integrity along with IT Industry.
PSO-5	Ability to write effective project reports, research publications and content development and to work in multidisciplinary environment in the context of changing technologies.

Course Outcomes (CO)

SEMESTER-I

COURSE CODE: PSIT101

COURSE NAME: Research in Computing

After successful completion of this course, students will be able to:	
CO-1	Solve real world problems with a scientific approach.
CO-2	Develop analytical skills by applying scientific methods.
CO-3	Recognize, understand and apply the language, theory and models of the field of business analytics
CO-4	Foster an ability to critically analyze, synthesize and solve complex unstructured business problems
CO-5	Understand and critically apply the concepts and methods of business analytics
CO-6	Identify, model and solve decision problems in different settings
CO-7	Interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity
CO-8	Create viable solutions to decision making problems

COURSE CODE: PSIT102
COURSE NAME: Data Science

After successful completion of this course, students will be able to:	
CO-1	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.
CO-2	Recognize and analyze ethical issues in business related to intellectual property, data security, integrity, and privacy.
CO-3	Apply ethical practices in everyday business activities and make well-reasoned ethical business and data management decisions.
CO-4	Demonstrate knowledge of statistical data analysis techniques utilized in business decision making.
CO-5	Apply principles of Data Science to the analysis of business problems.
CO-6	Use data mining software to solve real-world problems.
CO-7	Employ cutting edge tools and technologies to analyze Big Data.
CO-8	Apply algorithms to build machine intelligence.
CO-9	Demonstrate use of teamwork, leadership skills, decision making and organization theory.

COURSE CODE: PSIT103
COURSE NAME: Cloud Computing

After successful completion of this course, students will be able to:	
CO-1	Analyze the Cloud computing setup with its vulnerabilities and applications using different architectures.
CO-2	Design different workflows according to requirements and apply map reduce programming model.
CO-3	Apply and design suitable Virtualization concept, Cloud Resource Management and design scheduling algorithms.
CO-4	Create combinatorial auctions for cloud resources and design scheduling algorithms for computing clouds
CO-5	Assess cloud Storage systems and Cloud security, the risks involved, its impact and develop cloud application
CO-6	Broadly educate to know the impact of engineering on legal and societal issues involved in addressing the security issues of cloud computing.

COURSE CODE: PSIT104
COURSE NAME: Soft Computing Techniques

After successful completion of this course, students will be able to:	
CO-1	Identify and describe soft computing techniques and their roles in building intelligent machines
CO-2	Recognize the feasibility of applying a soft computing methodology for a particular problem
CO-3	Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems
CO-4	Apply genetic algorithms to combinatorial optimization problems
CO-5	Apply neural networks for classification and regression problems
CO-6	Effectively use existing software tools to solve real problems using a soft computing approach
CO-7	Evaluate and compare solutions by various soft computing approaches for a given problem.

SEMESTER-II

COURSE CODE: PSIT201
COURSE NAME: Big Data Analytics

After successful completion of this course, students will be able to:	
CO-1	Understand the key issues in big data management and its associated applications in intelligent business and scientific computing.
CO-2	Acquire fundamental enabling techniques and scalable algorithms like Hadoop, Map Reduce and NO SQL in big data analytics.
CO-3	Interpret business models and scientific computing paradigms, and apply software tools for big data analytics.
CO-4	Achieve adequate perspectives of big data analytics in various applications like recommender systems, social media applications etc.

COURSE CODE: PSIT202
COURSE NAME: Modern Networking

After successful completion of this course, students will be able to:	
CO-1	Demonstrate in-depth knowledge in the area of Computer Networking.
CO-2	To demonstrate scholarship of knowledge through performing in a group to identify, formulate and solve a problem related to Computer Networks

CO-3	Prepare a technical document for the identified Networking System Conducting experiments to analyze the identified research work in building Computer Networks

COURSE CODE: PSIT203
COURSE NAME: Microservice Architecture

After successful completion of this course, students will be able to:	
CO-1	Develop web applications using Model View Control.
CO-2	Create MVC Models and write code that implements business logic within Model methods, properties, and events.
CO-3	Create Views in an MVC application that display, edit data, and interact with Models and Controllers.
CO-4	Boost your hire ability through innovative and independent learning.
CO-5	Gaining a thorough understanding of the philosophy and architecture of .NET Core
CO-6	Understanding packages, metapackages and frameworks
CO-7	Acquiring a working knowledge of the .NET programming model
CO-8	Implementing multi-threading effectively in .NET applications

COURSE CODE: PSIT204
COURSE NAME: Image Processing

After successful completion of this course, students will be able to:	
CO-1	Understand the relevant aspects of digital image representation and their practical implications.
CO-2	Have the ability to design pointwise intensity transformations to meet stated specifications.
CO-3	Understand 2-D convolution, the 2-D DFT, and have the ability to design systems using these concepts.
CO-4	Have a command of basic image restoration techniques.
CO-5	Understand the role of alternative color spaces, and the design requirements leading to choices of color space.
CO-6	Appreciate the utility of wavelet decompositions and their role in image processing systems.
CO-7	Have an understanding of the underlying mechanisms of image compression, and the ability to design systems using standard algorithms to meet design specifications.

SEMESTER-III

COURSE CODE: PSIT301

COURSE NAME: Technical Writing and Entrepreneurship Development

After successful completion of this course, students will be able to:-	
CO-1	Develop technical documents that meet the requirements with standard guidelines. Understanding the essentials and hands-on learning about effective Website Development.
CO-2	Write Better Quality Content Which Ranks faster at Search Engines. Build effective Social Media Pages.
CO-3	Evaluate the essential parameters of effective Social Media Pages.
CO-4	Understand the importance of innovation and entrepreneurship.
CO-5	Analyze research and development projects.

COURSE CODE: PSIT302a

COURSE NAME: Applied Artificial Intelligence

After successful completion of this course, students will:-	
CO-1	be able to understand the fundamentals concepts of the expert system and its applications.
CO-2	be able to use probability and the concept of fuzzy sets for solving AI based problems.
CO-3	be able to understand the applications of Machine Learning. The learner can also apply a fuzzy system for solving problems.
CO-4	learners will be able to apply to understand the applications of genetic algorithms in different problems related to artificial intelligence.
CO-5	A learner can use knowledge representation techniques in natural language processing.

COURSE CODE: PSIT303a

COURSE NAME: Machine Learning

After successful completion of this course, students will be able to:-	
CO-1	Understand the key issues in Machine Learning and its associated applications in intelligent business and scientific computing.
CO-2	Acquire the knowledge about classification and regression techniques where a learner will be able to explore his skill to generate database knowledge using the prescribed techniques.

CO-3	Understand and implement the techniques for extracting the knowledge using machine learning methods.
CO-4	Achieve adequate perspectives of big data analytics in various applications like recommender systems, social media applications etc.
CO-5	Understand the statistical approach related to machine learning. He will also Apply the algorithms to a real-world problem, optimize the models learned and report on the expected accuracy that can be achieved by applying the models.

COURSE CODE: PSIT304a
COURSE NAME: Robotic Process Automation

After successful completion of this course, students will be able to:	
CO-1	Understand the mechanism of business process and can provide the solution in an optimize way.
CO-2	Understand the features use for interacting with database plugins.
CO-3	Use the plug-ins and other controls used for process automation.
CO-4	Use and handle the different events, debugging and managing the errors.
CO-5	Test and deploy the automated process.

SEMESTER IV

COURSE CODE: PSIT401
COURSE NAME: Blockchain

After successful completion of this course, students will be able to:	
CO-1	The students would understand the structure of a blockchain and why/when it is better than a simple distributed database.
CO-2	Analyze the incentive structure in a blockchain based system and critically assess its functions, benefits and vulnerabilities
CO-3	Evaluate the setting where a blockchain based structure may be applied, its potential and its limitations
CO-4	Understand what constitutes a "smart" contract, what are its legal implications and what it can and cannot do, now and in the near future
CO-5	Develop blockchain DApps.

COURSE CODE: PSIT402a
COURSE NAME: Natural Language Processing

After successful completion of this course, students will be able to:	
CO-1	Students will get idea about know-hows, issues and challenge in Natural Language Processing and NLP applications and their relevance in the classical and modern context.
CO-2	Student will get understanding of Computational techniques and approaches for solving NLP problems and develop modules for NLP tasks and tools such as Morph Analyzer, POS tagger, Chunker, Parser, WSD tool etc.
CO-3	Students will also be introduced to various grammar formalisms, which they can apply in different fields of study.
CO-4	Students can take up project work or work in R&D firms working in NLP and its allied areas.
CO-5	Student will be able to understand applications in different sectors

COURSE CODE: PSIT403a
COURSE NAME: Deep Learning

After successful completion of this course, students will be able to:	
CO-1	Describes basics of mathematical foundation that will help the learner to understand the concepts of Deep Learning.
CO-2	Understand and describe model of deep learning
CO-3	Design and implement various deep supervised learning architectures for text & image data.
CO-4	Design and implement various deep learning models and architectures.
CO-5	Apply various deep learning techniques to design efficient algorithms for real-world applications.

COURSE CODE: PSIT404a
COURSE NAME: Human Computer Interaction

After successful completion of this course, students will be able to:	
CO-1	have a clear understanding of HCI principles that influence a system's interface design, before writing any code.
CO-2	understand the evaluation techniques used for any of the proposed system.
CO-3	understand the cognitive models and its design.
CO-4	able to understand how to manage the system resources and do the task analysis.
CO-5	able to design and implement a complete system.