Course Code	Course Name	Category	L	T	P	Credit
20MBA204	**INDUSTRY 4.0 AND AI APPLICATIONS FOR BUSINESS**	Core	4	0	0	4

Preamble: The course on Industry 4.0 and AI applications for Business helps the students to comprehend the Concepts of Industry 4.0 and application of AI for business. The course equips students into the current state of AI technologies and the eco-system required to harness the power of AI in business applications.

Prerequisite: NIL

Course Outcomes: After the completion of the course the student will be able to:

CO 1	Recall the framework for industry 4.0 and business models.
CO 2	Explain the skill set requirements and talent development for the industry 4.0.
CO 3	Applying the artificial intelligence models for decision making.
CO 4	Analyze the insights on machine learning and neural networks
CO 5	Assessing IoT and artificial intelligence to business solutions.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	2	2	1	1	2
CO 2	1	2	2	1	3
CO 3	3	3	2	2	2
CO 4	1	2	1	1	2
CO 5	2	3	2	3	2

Assessment Pattern

Bloom's Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance   : 4 marks

Continuous Assessment Test (2 numbers)   : 16 marks

Assignment/Quiz/Course project   : 10 marks

Seminar and Discussion   : 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Syllabus	
Module 1	**Framework for Indusry 4.0** – Introduction, Components of Industry 4.0, Supportive technologies, Framework for Industry 4.0, Business Models, Business Model Components, Value proposition, Technology Lean Production Systems for Industry 4.0
Module 2	**Talent Development for Industry 4.0 -** Skill set requirements, development process, working in interdisciplinary team, Innovation and entrepreneurship, Overview of Cyber security – introduction, industrial challenges, cyber-attacks-cases and solutions, cyber security measures.
Module 3	**Artificial Intelligence and Business -** Introduction to Artificial Intelligence, Perception to prediction, Predictive model to make decision- Practicalities, AI and corporate strategy, Strategic disruption, Employing AI for business development, Challenges of AI.
Module 4	**Machine Learning** - Different ways a machine learns, Machine learning algorithms, Big data and machine learning, Patterns and Neural networks-Artificial neural networks, network learning, key challenges, Ethical considerations, Limitations of AI and ML, Deep Learning, Natural Language Processing.
Module 5	**Applications of IoT**, Applications of Robotics, The role of augmented reality-industrial applications, E -learning Technologies, Data and computing technologies, automated operations, **Common AI applications** -Applications across functional areas (marketing, finance, operations and HR / organisational development) Case discussions on AI platforms for business.

Textbooks
1. Ustundag Alper, Cevikcan Emre (2018). *Industry 4.0: Managing the Digital Transformation*. Springer.   2. Rajendra Akerkar (2019). *Artificial Intelligence for Business*, Springer.   3. Steven Finlay (2021). *Artificial Intelligence and Machine Learning for Business: A No-Nonsense Guide to Data Driven Technologies 2nd Edition*, Relativistic Books.

References and Suggested Readings
1. Doug Rose (2018). *Artificial Intelligence for Business: What You Need to Know about Machine Learning and Neural Networks,* Kindle Edition.   2. John Medicine (2019). *Artificial Intelligence for Business: A Modern Business Approach,* Kindle Edition.   3. Alex Castrounis (2019) *AI for People and Business: A Framework for Better Human Experiences and Business Success*, Oreilly ISBN-13: 978-1492036579.   4. Thomas H. Davenport (2018) *The AI Advantage: How to Put the Artificial Intelligence Revolution to Work*, MIT Press.