1.	Title of the course	Intelligent Systems Laboratory
2.	Course number	CS303P/CS519P
3.	Structure of credits	0-0-3-2
4.	Offered to	PG
5.	New course/modification to	Modification To CS3296/12-CS5292/12
6.	To be offered by	Department of Computer Science and Engineering
7.	To take effect from	January 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** To provide hands-on experience on key concepts in artificial intelligence, machine learning, deep learning and reinforcement learning methodologies. To impart knowledge on design and develop of applications over popular machine learning software platforms.	
10.	**Course Content:** Exercises on artificial intelligence methods including state space search, planning domain definition language and Prolog; Exercises on supervised learning methods including non-parametric and parametric methods, model selection, error characterization; Exercises on deep learning methods including convolutional neural networks, recurrent neural networks, auto-encoders, generative adversarial networks; Exercises on unsupervised learning methods including clustering and high-dimensional visualization; Exercises in reinforcement learning methodologies including Q-Learning.	
11.	**Textbook(s):** 1. Aurelien G, *Hands-on machine learning with scikit-learn & Tensorflow*, 1st Edition, O' Reilly (2018). 2. Manaswi N K, *Deep Learning with Applications using Python*, 1st Edition, Apress (2018).	
12.	**Reference(s):** 1. Ivan B, *PROLOG: Programming for Artificial Intelligence*, 3rd Edition, Pearson (2002). 2. Lapan M, *Deep Reinforcement Learning Hands-on*, 1st Edition, Packt (2018).	