Course Title	Artificial Intelligence Lab
Course Code	CC-310-L
Credit Hours	1 (0,3)
Category	Computing core
Prerequisite	None
Co-Requisite	None
Follow-up	None
Course Introduction	The objective of the course is to introduce and then build the proficiency of students in different AI programming languages. Python is proposed for the course.

Course Learning Outcomes (CLOs)	At the end of the course, the students will be able to:	BT	PLO
	CLO1: Understand the fundamental constructs of Python programming language.	C2 (Understand)	1,2
	CLO2: Comprehend the fundamental constructs of programming languages for data analysis and representation.	C3 (Apply)	1,2,3
	CLO3: Understand and apply the Object-oriented concepts in the programming languages.	C4 (Identify)	1,2,3
	CLO4: Apply various libraries for plotting, interpreting and analyzing data in Python.	C3 (Apply)	3,4,5

Syllabus	Introduction to Python programming, variables, expressions, operands and operators, loops, control structures, debugging, error messages, functions, strings, lists, object-oriented constructs and basic graphics in the languages. Logic programming: knowledge representation & search in the context of logic programming. Reasoning in logic programming: unification, horn clause logic, and resolution, Knowledge Representation Schemas: Logic, frames, semantic nets, scripts; problems in knowledge representation. Expert systems.

Suggested Instructional/ Reading Material	1. Tony Gaddis, "Starting out with Python", 4th Edition, Pearson Education, 2017. 2. Ivan Bratko, Prolog: Programming for Artificial Intelligence, 4th Edition, Pearson, 2011, ISBN-13: 978-0321417466. 3. Severance, C.R., "Python for everybody: Exploring data using Python 3." CreateSpace Independent Publ Platform, 2016. 4. Miller, B.N., Ranum, D.L. and Anderson, J., "Python programming in context." Jones & Bartlett Pub., 2019. 5. McKinney, W., "Python for data analysis: Data wrangling with Pandas, NumPy, and IPython.", 2nd Edition O'Reilly Media, Inc., 2023. 6. Luger, G.F. and Stubblefield, W.A., "AI algorithms, data structures, and idioms in Prolog, Lisp, and Java", Pearson Addison-Wesley. 2009. 7. Russell, S. and Norvig, P. "Artificial Intelligence. A Modern Approach", 3rd ed, Prentice Hall, Inc., 2015. 8. Severance, C.R., 2016. "Python for everybody: Exploring data using Python 3." CreateSpace Independent Publ Platform. 9. Miller, B.N., Ranum, D.L. and Anderson, J., 2019. "Python programming in context." Jones & Bartlett Pub. 10. Joshi, P., 2017. "Artificial intelligence with python." Packt Publishing Ltd. 11. Handouts and Internet references