Academic Council Meeting No. and Date :  03 / February 14, 2022

Agenda Number :      7              Resolution Number :  13 / 5.3

VidyaPrasarak Mandal's

**B. N. Bandodkar College of Science (Autonomous), Thane**

# Certificate course in

# Artificial Intelligence

[With effect from Academic Year 2022-2023]

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Eligibility :

Passed 12<sup>th</sup> standard (HSC) of Maharashtra State Board / CBSE / ICSE board or equivalent.

Mode of Conduct :

Offline lectures / Online lectures

# VPM's B.N.Bandodkar College of Science (Autonomous), Thane

# Structure of Programme

| CourseCode | Course Title | No. of lectures | Credits |
|---|---|---|---|
| **BNBCCAI1T1** | Certificate course in Artificial Intelligence | **40** | **2** |

# Syllabus

| Course Code | Course Title | Credits | No. of lectures |
|---|---|---|---|
| **BNBCCAI1T1** | **Certificate course in Artificial Intelligence** | **2** | |
| **Unit I :** | • **Introduction:** AI,ComponentsofAI,HistoryofAI,SalientPoints,Knowledgeand KnowledgeBasedSystems,AIinFuture,Applications.<br>• **Logic and Computation:** Classical Concepts, Computational Logic, FOL,Symbol Tableau, Resolution, Unification, Predicate Calculus in ProblemSolving,ModelLogic,TemporalLogic.<br>• **Heuristic Search:** Search-Based Problems, Informed Search, Water JugProblem,TSP,BranchandBoundMethod,TSPAlgorithm | **10** |
| **Unit II :** | • **Game Playing:** AND/OR Graph, Minimax Problem, Alpha-Beta Search,PuzzleSolving,AIversusControlRobot.<br>• **Knowledge Representation:** Structure of an RBS, Merit, Demerit andApplicabilityofRBS,SemanticNets,Frames,ConceptualGraphs,ConceptualDependency,Scripts. | **10** |
| **Unit III :** | • **Automated Reasoning:** Default Logic, Problem for Default Reasoning,Closed World Assumption, Predicate Completion, Circumscription, DefaultReasoning, Model BasedReasoning, Case Based Reasoning, ReasoningModels,Multimodels,MultimodalReasoning<br>• **Knowledge-BasedSystems:** StructureofanExpertSystem,ExpertSystems in different Areas, Expert System Shells, Comparison of ExpertSystems, Comparative View, Ingredients of Knowledge-Based Systems,Web-basedExpertSystems | **10** |

## Books for Reference

| | |
|---|---|
| **1.** | ArtificialIntelligence by R.B.Mishra<br>EEE, PHI |
| **2.** | ArtificialIntelligence&Soft ComputingforBeginners by AnanditaDas Bhattacharjee<br>SPD |
| **3.** | ArtificialIntelligence by E.Richand K.Knight<br>TMH |
| **4.** | ArtificialIntelligence:AModern Approach by S.Russel, P.Norvig<br>Pearson Education |

## Pattern of Evaluation(8 Hours for examination, assessment and evaluation)

MCQ Test/ Online MCQ Test (Duration: 1 Hour)

Assessment and Evaluation of Case Study Reports submitted by participants (Topics for case study to be allotted by teachers in consultation with students)

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