

Lokmanya Tilak Jankalyan Shikshan Sanstha's PRIYADARSHINI COLLEGE OF ENGINEERING (Recognised by A.I.C.T.E., New Delhi & Govt. of Maharashtra, Affiliated to R.T.M.Nagpur University) Near CRPF Campus, Hingna Road, Nagpur-440 019, Maharashtra (India) Phone : 07104 – 236381, 237307, Fax : 07104 – 237681, email : principal.pce.ngp@gmail.com, www.pcenagpur.edu.in



# **1.3.2** Average percentage of courses that include experiential learning through project work/field work/internship during last five years

### **B.E – ELECTRONICS AND TELECOMMUNICATION ENGINEERING** (2020-21)

Sr. No	Name of the course that include experiential learning through Project work/ Internship	Subject Code	Domain
1	Electronic Devices and Circuits	BEETE302T/P	
2	Analog Circuits & Design	BEETE503T/P	
3	Electronics Workshop Practice	BEETE606P	
4	Electromagnetic Fields	BEETE401T	Analog & Digital
5	Digital Circuits and Fundamental of Microprocessor	BEETE404T/P	Circuits
6	Microprocessor & Microcontroller	BEETE502T/P	
7	Electronics Measurement and Instrumentation	BEETE303T/P	
8	Network Analysis And Synthesis	BEETE406T	
9	Software Workshop	BEETE407P	
10	Control System Engineering	BEETE603T	
11	Signals & Systems	BEETE403T	Signal Processing
12	DSP Processor & Architecture	BEETE701T/P	
13	Digital Signal Processing	BEETE602T/P	
14	Elective 2- Digital Image Processing	BEETE804T	
15	Advanced Digital System Design	BEETE701T/P	
16	Elective 2- Embedded System	BEETE804T	-
17	Elective 1 - VLSI Signal Processing	BEETE705T	VLSI/Embedded System
18	Elective 3- Robotics and Automation	BEETE805T	
19	Elective 3- CMOS VLSI Design	BEETE805T	
20	Antenna & Wave Propagation	BEETE501T	
21	Communication Electronics	BEETE504T	
22	Telecommunication Switching Systems	BEETE601T	-
23	Digital Communication	BEETE604T/P	
24	Elective-1 Data Compression & Encryption	BEETE705T	Communication
25	Optical Communication	BEETE703T/	communication
26	Television And Video Engineering	BEETE702T/P	
27	Wireless & Mobile Communication	BEETE803T	
28	Computer Communication Network	BEETE802T/P	
29	Microwave & Radar Engineering	BEETE801T/P	
30	Elective-2 Artificial Intelligence	BEETE804T	



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31	Elective 3- Satellite Communication	BEETE805T	
32	Object Oriented Programming & Data Structure	BEENE304T/P	
33	Applied Mathematics- III	BEETE301T	
34	Applied Mathematics- IV	BEETE401T	Others
35	Environmental Studies	BEETE406T	
36	Industrial Visit	BEETE607P	



# B. E. Eighth Semester

# (Electronics & Communication/ Electronics & Telecommunication Engg)

# Elective 2- ARTIFICIAL INTELLIGENCE

Duration: 3 Hr. College Assessment: 20 Marks University Assessment: 80 Marks

# Subject Code: BEECE804T/BEETE804T

[3-0-1

-4]
Objectives:

1. To introduce the fundamental concepts of artificial intelligence;

- 2. To equip students with the knowledge and skills in logic programming using Prolog;
- 3. To explore the different paradigms in knowledge representation and reasoning;
- 4. To explain the contemporary techniques in machine learning;
- 5. To evaluate the effectiveness of hybridization of different artificial intelligence techniques.

Outcome: By the end of the course students shall be able to:

1. understand the history, development and various applications of artificial intelligence; 2. familiarize with propositional and predicate logic and their roles in logic programming;

3.understand the programming language Prolog and write programs in declarative programming style; . 4.learn the knowledge representation and reasoning techniques in rule-based systems, case-based systems, and model-based systems;

- 5. understand how uncertainty is being tackled in the knowledge representation and reasoning process, in particular, techniques based on probability theory and possibility theory (fuzzy logic);
- 6. master the skills and techniques in machine learning, such as decision tree induction, artificial neural networks, and genetic algorithm;
- 7. apply and integrate various artificial intelligence techniques in intelligent system development as well as understand the importance of maintaining intelligent systems.

### Unit 1: Foundation

### 8)

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Intelligent Agents, Agents and environments, Good behavior, The nature of environments, structure of agents, Problem Solving, problem solving agents, example problems, searching for solutions, uniformed search strategies, avoiding repeated states, searching with partial information.

### Unit 2: Searching

Search and exploration, Informed search strategies, heuristic function, local search algorithms and optimistic problems, local search in continuous spaces, online search agents and unknown environments, Constraint satisfaction problems (CSP), Backtracking search and Local search for CSP, Structure of problems, Adversarial Search, Games: Optimal decisions in games, Alpha- Beta Pruning, imperfect real-time decision, games that include an element of chance.Unit 3: Knowledge Representation (08)

First order logic, representation revisited, Syntax and semantics for first order logic, Using first order logic, Knowledge engineering in first order logic, Inference in First order logic, prepositional versus first order logic, unification and lifting, forward chaining, backward chaining, Resolution, Knowledge representation, Ontological Engineering, Categories and objects, Actions - Simulation and events, Mental events and mental objects.

### Unit 4: Learning

### 8)

Learning from observations: forms of learning, Inductive learning, Learning decision \trees, Ensemble learning, Knowledge in learning, Logical formulation of learning, Explanation based learning, Learning using relevant information, Inductive logic programming, Statistical learning methods, Learning with complete data, Learning with hidden variable, EM algorithm, Instance based learning, Neural networks - Reinforcement learning, Passive reinforcement learning, Active reinforcement learning, Generalization in reinforcement learning.

### Unit 5: Perception and Expert System

### 6)

Visual perception -Waltz's algorithm, Introduction to Expert System, Architecture and functionality, Example Expert system

### Unit 6: Natural Language Understanding

### 7)

Why NL, Formal grammar for a fragment of English, Syntactic analysis, Augmented grammars, Semantic interpretation, Ambiguity and disambiguation, Discourse understanding, Grammar induction, Probabilistic language processing, Probabilistic language models.

### Text Book

1. Stuart Russell, Peter Norvig, "Artificial Intelligence, A Modern Approach", 2<sup>nd</sup> Edition,

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Pearson Educ

## **Reference Books**

- 1. Nils J. Nilsson, "Artificial Intelligence: A new Synthesis", Harcourt Asia Pvt. Ltd., 2000.
- 2. Elaine Rich and Kevin Knight, "Artificial Intelligence", 2nd Edition, Tata McGraw-Hill,
- 3. George F. Luger, "Artificial Intelligence-Structures and Strategies for Complex

Problem Solving", Pearson Education / PHI, 2002.

- 4. Eugene charniak, "Introduction to Artificial Intelligence", Pearson Education.
- 5. Deepak Khemani, "A First Course in Artificial Intelligence", McGraw Hill Publications

### **PROJECT REPORT**

on "Multi-Level Marketing with Grocery System using Python with Django & Machine Learning"

Submitted in partial fulfilment of requirements for the degree of

Bachelor of Engineering in

**Electronics and Telecommunication Engineering** 

Submitted by

MAYUR KUKADE DEWANAND KUMARE

SATYAM DUBEY ASHUTOSH MOHURLE

Under the guidance of Prof. Dr. NITIN AMBATKAR



Department of Electronics and Telecommunication Engineering Priyadarshini College of Engineering, Nagpur-440019

2020-2021

### CERTIFICATE

This is to certify that the project entitled "Multi-Level Marketing with Grocery System using Python with Django & Machine Learning"

have been carried out by MAYUR KUKADE, ASHUTOSH MOHURLE, SATYAM DUBEY, DEWANAND KUMARE under my guidance and submitted the partial fulfillment for the degree of Bachelor Engineering (B.E) in Electronics and Telecommunication Engineering, during the Academic year 2020-2021 is a bonafide work prepared by them.

This work fulfils the requirements relating the standard of work for the award of Bachelor of Engineering in Electronic and Telecommunication to be awarded by Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.

Place: Nagpur Date: 20/6/21

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Prof. Dr. Nitin Ambatkar

Dr.V.K.Taksande

Head of Department H.O.D. Deptt. of E&1 Priyadarshini College of Engineering, Nagpur-19

of Engg. Priyadarshini Colleg Nagowal

### ABSTRACT

Online grocery business is at emerging stage in India. Online retailers need to analyze different factors that affect consumers purchase intentions towards online grocery shopping. It is also observed that buying behavior of consumers for online grocery shopping is totally different than buying from physical markets. Online grocery model fulfills consumers' need and help them to save their time and effort. The purpose of this paper is to throw a light on different types of e commerce models. The paper also tries to understand the demographic profile of the customers who groceries through online mode, reason to purchase groceries online and satisfaction level of customers buying groceries online.

Python has emerged as a popular and the preferred web programming language, because of its simplicity to code and ease of learning. Being a flexible language, it offers fast development of web based applications. Web development in Python is aided by the powerful frameworks such as Django, web2py, Pyramid, and Flask that Python supports. Thus Python promises to emerge as one of the preferred choice language for web applications.

### **B. E. Sixth Semester**

(Electronics / Electronics & Communication/ Electronics & Telecommunication Engg)

<b>DIGITAL COMMUNICATION</b>					
<b>Duration: 3 Hrs. College Assessment:</b>					

20 Marks University Assessment: 80 Marks

### Subject Code: BEENE604T/ BEECE604T/ BEETE604T

[4 - 0 - 1 - 5]

**Objectives:** 

The Course Objectives are:

- 1. To study basic components of digital communication systems.
- 2. To understand the designing aspects of optimum receivers for digital modulation techniques.
- 3. To study the analysis of error performance of digital modulation techniques.
- 4. To study the designing of digital communication systems under given power, spectral and error performance constraint

**Outcome**:

After completing this course students shall be able to:

- 1. Explain the working principles of basic building blocks of a digital communication system.
- 2. Describe a random process in terms of its mean and correlation functions and characterize special Gaussian and Rayleigh distributions.
- 3. Explain receiver techniques for detection of a signal in AWGN channel
- 4. Describe digital modulation techniques.
- 5. Demonstrate the concept of coding and decoding techniques.
- 6. Model digital communication systems using appropriate mathematical techniques.
- 7. Describe spread spectrum analysis.

### UNIT-I:-Digital Communication Concept

(10)

Review of Random variables, PDFs & CDFs, Central limit Theorem. Model of digital communication system, Gram Schmitt Orthogonalization procedure, signal space concept,

Geometric interpretation of signals, probability of error, correlation receiver, matched filter receiver.

### UNIT-II: - Source & Waveform Coding Methods

Source coding Theorem, Huffman coding-Z encoding algorithm, rate distortion theory for optimum quantization, scalar & vector quantization.

Waveform coding methods: ADPCM, Adaptive Sub-Band & Transform coding, LP & CELP coding.

UNIT-III:-Digital Modulation Techniques

(10)

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# **UNIT-IV:-Channel Coding (PART-1)**

Introduction to Galois field, Construction of Galois field GF (2 m) & its basic properties. Types of error control: Forward error correction (FEC), Automatic repeat request system (ARQ). Convolution encoding and decoding distance properties, Viterbi algorithm and Fano algorithm.

# UNIT-V: - Channel Coding (PART-II)

Trellis coded modulation, Introduction to Turbo coding, & Reed Solomon Codes: encoding & decoding, Low density parity check coding (LDPC)

Spread - Spectrum methods: - Study of PN sequences, direct sequence methods, Frequency hop methods, slow and fast frequency hop, performance analysis, synchronization methods for spread spectrum. Application of spread spectrum, CDMA, Introduction to OFDM

**Books:** 

**Text Books:** 

**UNIT-VI:** 

- 1. Digital communication: John G Prokis (TMG)
- 2. Digital communication: Simon Haykin (WEP)

**Reference Books:** 

- 1. Lathi B.P. Modern Digital and Analog communications systems PRISM Indian Ed.
- 2. Digital Communication: J.S.Chitode
- 3. Digital Communication (Fundamentals & applications): Bernard Scalr
- 4. Introduction to Error Control Codes: Salvatore Gravano

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(10)

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- 5. OFDM For wireless communication systems: Ramjee Prasad
- 6. Modern Communication systems (Principles and application): Leon W. Couch II (PHI)
- 7. Error Control Coding: Shu Lin & Daniel J.Costello

# **PROJECT REPORT**

### ON

# "LIVE COLLEGE CLASSES & ASSESSMENT BASED SYSTEM USING PYTHON WITH DIANGO & MACHINE LEARNING"

Submitted in partial fulfillment of requirement for the degree of Bachelor of Engineering in

# Electronics and Telecommunication Engineering

Submitted By

Neha Kale

Nainsi Urkude

Kajal Yede Sarang Katre

Under the Guidance of

### Dr.(Mrs).S.P.WASHIMKAR

Co-Guide

Dr.(Mrs).SNEHAL GOLAIT (assistant professor in computer technology)



Department of Electronics & Telecommunication Priyadarshini College of Engineering, Nagpur-440019 Session 2020-21

# CERTIFICATE

This is to certify that the project entitled "LIVE COLLEGE CLASSES & ASSESSMENT BASED SYSTEM USING PYTHON WITH DJANGO &MACHINE LEARNING" has been carried out by

Neha Kale

Kajal Yede

Nainsi Urkude

Sarang Katre

Under my guidance and submitted the partial fulfillment for the degree of Bachelor of Engineering (B.E.) in Electronics and Telecommunication Engineering, during the academic year 2020-21 is a bonafide work prepared by them.

This work fulfills the requirements relating the standard of work for the award of Bachelor of Engineering in Electronics and Telecommunication to be awarded by Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.

Place: Nagpur

Date: 25-05-2021

Dr.(Mrs).S.P.WASHIMKAR

Guide Guide Dr.(Mrs).SNEHAL GOLAIT

Co-Guide

3

Dr. V.K.TA NDE

Head of Department

Dr. M.P.S

Principal

### ABSTRACT

Online learning is an educational process which takes place over the Internet as a form of distance education. Distance education became ubiquitous as a result of the COVID-19 pandemic during 2020. Because of these circumstances, online teaching and learning had an indispensable role in early childhood education programs, even though debates continue on whether or not it is beneficial for young children to be exposed extensively to Information and Communication Technology (ICT). This descriptive study demonstrates how a preservice teacher education course in early childhood education was redesigned to provide student teachers with opportunities to learn and teach online. It reports experiences and reflections from a practicum course offered in the Spring Semester of 2020.It describes three phases of the online student teachers' experiences-Preparation, Implementation, and Reflection. Tasks accomplished in each phase are reported. Online teaching experiences provided these preservice teachers with opportunities to interact with children, as well as to encourage reflection on how best to promote young children's development and learning with online communication tools. During the COVID-19 pandemic, academic institutions are promptly shifting all educational activities to the e-learning format. The present work describes concurrent procedures for online teaching and assessment performed at the school and college. We also explored the impact of e-learning and assessment on the performance of students and faculty, and the challenges to their sustainability.

Keywords: Distance education, Computer conferencing, Global education

### B. E. Eighth Semester

# (Electronics & Communication/ Electronics & Telecommunication Engg)

# Elective 2- ARTIFICIAL INTELLIGENCE

Duration: 3 Hr. College Assessment: 20 Marks University Assessment: 80 Marks

[3 - 0 - 1]

### Subject Code: BEECE804T/BEETE804T

-4]

Objectives:

6. To introduce the fundamental concepts of artificial intelligence;

- 7. To equip students with the knowledge and skills in logic programming using Prolog;
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3.understand the programming language Prolog and write programs in declarative programming style; . 4.learn the knowledge representation and reasoning techniques in rule-based systems, case-based systems, and model-based systems;

- 8. understand how uncertainty is being tackled in the knowledge representation and reasoning process, in particular, techniques based on probability theory and possibility theory (fuzzy logic);
- 9. master the skills and techniques in machine learning, such as decision tree induction, artificial neural networks, and genetic algorithm;
- 10. apply and integrate various artificial intelligence techniques in intelligent system development as well as understand the importance of maintaining intelligent systems.

### Unit 1: Foundation

# 8)

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Intelligent Agents, Agents and environments, Good behavior, The nature of environments, structure of agents, Problem Solving, problem solving agents, example problems, searching for solutions, uniformed search strategies, avoiding repeated states, searching with partial information.

# Unit 2: Searching

Search and exploration, Informed search strategies, heuristic function, local search algorithms and optimistic problems, local search in continuous spaces, online search agents and unknown environments, Constraint satisfaction problems (CSP), Backtracking search and Local search for CSP, Structure of problems, Adversarial Search, Games: Optimal decisions in games, Alpha- Beta Pruning, imperfect real-time decision, games that include an element of chance.Unit 3: Knowledge Representation (08)

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### Unit 5: Perception and Expert System

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Visual perception -Waltz's algorithm, Introduction to Expert System, Architecture and functionality, Example Expert system

### Unit 6: Natural Language Understanding

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Why NL, Formal grammar for a fragment of English, Syntactic analysis, Augmented grammars, Semantic interpretation, Ambiguity and disambiguation, Discourse understanding, Grammar induction, Probabilistic language processing, Probabilistic language models.

### Text Book

 Stuart Russell, Peter Norvig, "Artificial Intelligence, A Modern Approach", 2<sup>nd</sup> Edition,

### **Reference Books**

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Pearson Education

- 6. Nils J. Nilsson, "Artificial Intelligence: A new Synthesis", Harcourt Asia Pvt. Ltd., 2000.
- 7. Elaine Rich and Kevin Knight, "Artificial Intelligence", 2nd Edition, Tata McGraw-Hill,
- 8. George F. Luger, "Artificial Intelligence-Structures and Strategies for Complex

Problem Solving", Pearson Education / PHI, 2002.

- 9. Eugene charniak, "Introduction to Artificial Intelligence", Pearson Education.
- 10. Deepak Khemani, "A First Course in Artificial Intelligence", McGraw Hill Publications

# **Project Report**

# ON

# Find nearest ICMR based covid-19 lab on

# **Distributed** Network

Submitted in partial fulfilment of requirement for the degree of Bachelor of Engineering in)

**Electronics and Telecommunication Engineering** 

# Submitted by

Prakshik Deotale Nikita Bodalkhande Sukanya Hadke Nayna Meshram Guided by Prof. P.J. Suryawanshi



Department of Electronics and Telecommunication Engineering Priyadarshini College of Engineering, Nagpur - 440019 2020-21

Scanned by TapScanner

#### CERTIFICATE

This is to certify that the project entitled "Find nearest ICMR based covid-19 lab on Distributed Network" has been carried out by

#### **Prakshik Deotale**

#### Nikita Bodalkhande

Sukanya Hadke

Nayna Meshram

under my guidance and submitted the partial fulfillment for the degree of Bachelor of Engineering (B.E.) in Electronics and Telecommunication Engineering, during the academic year 2019-20 is a bonafide work prepared by them.

This work fulfils the requirements relating the standard of work for the award of Bachelor of Engineering in Electronics and Telecommunication to be awarded by Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.

Place: Nagpur

Date: 15/09/2021

farrows Mrs. P.J. Suryawanshi

Guide

Dr. V.K. Takasande

Head of Department

H.O.D. Deptt. of E&1 Priyadarshini College of Engineering, Nagpur-19

Dr. M.P.Singh

Principal

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### ABSTRACT

> The project we discussing on is the ICMR lab tracking in Distributed Network, which will allow us to find the nearest I.C.M.R based covid-19 lab in distributed Network and also used to explore labs in distributed network.

>Ever since the first report of Coronavirus Disease 2019 (COVID-19) at Wuhan, China in December 2019, it has affected over 200 countries and territories around the world with two million cases and more than 120,000 deaths as on 21 April 2020.

> With this growing crisis, companies & researchers over the world are looking for the ways to address the challenges of this virus, to mitigate the spread and develop a cure for this disease. In this baffling battle, science and technology is playing a vital role.

> For example, early in the outbreak when China initiated its response to virus it focused on artificial intelligence (AI) by relying on like facial recognition cameras to track the infected patients with travel history, robots to deliver food and medicines, drones to disinfect public places, to patrol and broadcast audio messages to public encouraging them to stay at home.

➤ AI has been used extensively to discover new molecules on the way to find aid for COVID19. Many researchers are using AI to find new drugs and medicines for the cure, along with some computer science researchers focusing on detecting the infectious patients through medical image processing like X-rays and CT scans.

➤ AI is even developing tracking software's like monitoring bracelets that helps in classification of peoples breaching the quarantine rule. Smart phones and AI enhanced thermal cameras are also being used for detecting fever and infected people.

> Countries like Taiwan infused the national medical insurance database with inputs from the immigration and customs database, hence confronting the coronavirus patients on the basis of their travel history and symptoms.

➤ In all, AI is used to identify, track and forecast outbreaks, it is helping in diagnosing the virus. It is used in processing the healthcare claims. The drones and robots are used to deliver food and medicine supplies as well as in sterilizing public places. AI is helping to develop drugs and coronavirus vaccine using super computers.

➤ This present study focuses on the use of artificial intelligence advances in the fight against the Coronavirus epidemic. It gives a thorough review of the technology advances used to decrease and smother the substantial impact of the outburst.

> The motivation for the present study is not only limited to assess the effect of the portrayed procedures but also to prescribe their utilization as well. This shows the reader the applications of AI and presents an underlying picture of how modern technology could react to the COVID-19 pandemic