



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f &12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: -2022-23

1.3.2 Details of value-added courses for imparting transferable and life skills offered during the year

Name of the value-added courses (with 30 or more contact hours) offered	Course Code, if any	No. of times offered during the year	Duration of course (in hours)	Number of students enrolled during the year	1.3.3 Number of students who completed the course during the year
IoT-for health care Application	NO	1	30	110	110
Machine learning and Bayesian Inference for Healthcare Applications	NO	1	30	106	106


Academic Coordinator


HOD





EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f &12B)
KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: -2022-23

Ref: EEC/BME/VAC/2022-23

Date: 10.10.2022

CIRCULAR

Department of Biomedical Engineering has planned to conduct Value added course on "Machine Learning and Bayesian Inference for Healthcare Applications" from 25.10.2022 to 28.10.2022 (30 hours) at the Biomedical Computational Biological Laboratory. Interested students are directed to their name to the respective course coordinator before 19.10.2023.

Course Coordinator

HOD

Copy to

- Notice Board
- Principal
- HOD file



Excel

ENGINEERING COLLEGE (AUTONOMOUS)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, MECH, CSE & ECE), NAAC (A+ Grade- 3.26) and
Recognized by UGC (2f&12B)

Date

25 to 28
October
2022
(30 hrs)

Time

9:30 AM
–
4.30 PM



B.E. - AERO,
MECH, CSE,
ECE

DEPARTMENT OF BIOMEDICAL ENGINEERING

Value added course on

**Machine Learning and Bayesian Inference
for Healthcare Applications**



Dr. B. Balasubramanian

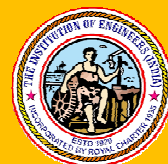
**Professor & Head /BME,
Excel Engineering College,
Komarapalayam**

**Dr. Saroj Kumar Sah
AP/BME
Program Co-Ordinator**

Venue: APJ Abdul Kalam Hall.

**Dr. Saroj Kumar Sah
Activity Coordinator**

**Dr. B. Balasubramanian
Head of the Department**





EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Ac credited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f &12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: 2022-23

Value-added course: MACHINE LEARNING AND BAYESIAN INFERENCE FOR HEALTHCARE APPLICATIONS

Course Objectives:

At the end of this course, students should:

- Understand how learning and inference can be captured within a probabilistic framework and how probability theory can be applied to handle uncertainty in AI systems.
- Understand several algorithms for machine learning and apply those methods in practice with proper regard for good experimental practice.

Course outcome:

By the end of this course, students will be able to:

- Explain the foundational concepts of machine learning, including supervised, unsupervised, and reinforcement learning, and understand their relevance in healthcare contexts.
- Describe the principles of Bayesian inference, including prior and posterior probabilities, likelihoods, and Bayes' theorem, and apply them to healthcare-related problems.
- Evaluate and select appropriate machine learning algorithms for different healthcare tasks, considering data type, volume, and quality factors.



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f &12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: -2022-23

**VALUE ADDED COURSE: MACHINE LEARNING AND BAYESIAN INFERENCE FOR
HEALTHCARE APPLICATIONS**

Course Plan

Course coordinator: Dr. B. Balasubramanian, Professor and Head/BME

S.No.	Description	Allotted Hours		Course instructor
		Theory	Practical	
1.	Introduction to learning and inference.	1		Dr. B. Balasubramanian
2.	knowledge using Bayesian networks	1		
3.	Linear classifiers I.	1		
4.	Gaussian processes.	1		
5.	Support vector machines (SVMs)	1		
6.	Hyperparameters	1	2	
7.	Measuring performance		2	
8.	Cross-validation of Data set	1	2	
9.	Experimental methods		2	
10.	Markov random fields	1	2	
11.	Approximate inference		2	
12.	Markov chain Monte Carlo methods	1	2	
13.	Conditional independence.		2	
14.	Exact inference in Bayesian networks	1	2	
15.	Implement the data preprocessing steps dataset for model training.		2	

Total hours to be handled in hours: Theory: 5+5

Practical: 20

Total: 30


Course Coordinator


HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING

Academic Year: 2022-23

Value-added course: Machine learning and Bayesian inference for healthcare application

Student Enrolment List

S.No.	Register No	Name	Signature
1	730920121001	AARTHI. K	K. Arathi
2	730920121002	ABINISHA.A	Abinisha
3	730920121003	ABIPRIYA.T	Abipriya
4	730920121004	ALEN SEBSTAIN	Alen Sebastain
5	730920121005	ARAVINTH.N	Aravindh N
6	730920121006	ASWIN.G	A.Swin
7	730920121007	BHUVANESWARI.M	Bhuvaneshwari
8	730920121008	BHUVANESWARI.V	Bhuvaneshwari
9	730920121009	DEEPALAKSHMI.S	Deepalakshmi
10	730920121010	DEEPIKA.M	Deepika
11	730920121011	DEVI MEENATCHI.G	Devi Meenatchi
12	730920121012	DHANUSH.M	Dhanush
13	730920121013	DHARUNPRAKASH.S	Dharunprakash
14	730920121014	DHILIPKUMAR.M	Dhilipkumar
15	730920121015	DINESH.G	Dinesh
16	730920121016	DURKA.M	Durka
17	730920121017	FAREEN.N	Fareen
18	730920121018	GUNA.S	Guna
19	730920121019	JANANAYAGAN.S	Jananayagan
20	730920121020	JANSIRANI.S	Jansirani
21	730920121021	JAYA.N	Jaya
22	730920121022	JEEVA.P	Jeeva
23	730920121023	JENIN.G	Jenin
24	730920121024	KAVIARASU.V	Kaviarasu
25	730920121025	KAVITHA.P	Kavitha
26	730920121027	KAVIYA.S	Kaviya
27	730920121028	KISHORE.A	Kishore
28	730920121029	KOKILA.M	Kokila
29	730920121030	KUMAREESAN.S	Kumareesan
30	730920121032	MADHESHWARAN.P	Madheshwaran
31	730920121033	MAHENDHIRAN.S	Mahendhiran
32	730920121034	MANAV MELVIN.S	Manav Melvin
33	730920121035	MANIKANDAN.S	Manikandan

34	730920121036	MD MUZAMMIL	Md. Muzammil
35	730920121037	MONIKA.M.P	Monika.M.P
36	730920121038	MUGESH.M	Mugesh.M
37	730920121039	NILUSIYA RAAI.J	S.N.J.
38	730920121040	PANDIDEVI.T	Pandidevi.T
39	730920121041	PAVITHRA.M	Pavithra.M
40	730920121042	POOVARASAN.N	N. Poovarasan
41	730920121043	PRIKANTH.G	P. Prakash
42	730920121044	RAJAVELU.V	Rajavelu.V
43	730920121045	RAMESH.G	Ramesh.G
44	730920121046	RAMYA SHRI.S	Ramya Sri.S
45	730920121047	RAQEEB UL	Raqeeb Ul
46	730920121048	MASNAAD.K.M	Masnaad.K.M
47	730920121049	RAUSHANI BHARTI	Raushani Bharti
48	730920121050	RUBHASRI	Rubhasri
49	730920121052	SABISHEK.R	Sabishek.R
50	730920121053	SASIPRAKASH.S	S. Prakash
51	730920121054	SHANMUGAM.M	S. Shanmugam
52	730920121055	SHOBANA.V	S. Shobana
53	730920121056	SOWMIYA.A.R	Sowmya.A.R
54	730920121057	SUMIT RAJ	Sumit Raj
55	730920121058	SWETHA.S	Swetha.S
56	730920121059	THAMARAISELVAN.K	K. Thamaraiselvan
57	730920121060	VANITHA.M	M. Vanitha
58	730920121061	VASANTHA KUMAR.K	Vasantha Kumar.K
59	730920121062	VELAN.K	K. Velan
60	730920121063	VIGNESH.A	A. Vignesh
61	730920121302	YOGAVATHI.M	M. Yogavathi
62	730920121301	LOCHANA SHILAL	Lochana Shilal
63	730920121501	PRIYA R	Priya.R
64	730920121001	VIKRAHAMBRIDHA E	E. Vikram
65	730920121002	MYTHINI A	A. Mythini
66	730921121001	ABINAYA.K	A. Binaya
67	730921121002	AJAI.S.V	S.V. Ajai
68	730921121003	AJAY KUMAR.M	M. Ajay Kumar
69	730921121004	BALAJI.S	S. Balaji
70	730921121005	BALAMANI.S	Balamani.S
71	730921121006	DHANUSH.K	Dhanush.K
72	730921121007	DHANUSRI.J	Dhanusri.J
73	730921121008	DHARUN SANKAR.M	M. Dharmasankar
74	730921121009	DHIVYA BHARATHI.P	P. Dhivyabhargavi
75	730921121010	DINESH.R	R. Dinesh
76	730921121011	DIVYA BHARATHI.R	R. Divyabhargavi
77	730921121012	DURAI PANDI.S	S. Durai Pandi
78	730921121013	GIRI.R	R. Girish
79	730921121014	GNANASELVI.R	R. Gnaneselvi
80	730921121015	GOKUL.N	N. Gokul
81	730921121016	GOPINATH.P	P. Gopinath
82	730921121017	GOWTHAM.S	S. Gowtham
83	730921121018	GURUBARAN.G	G. Gurubaran
84	730921121019	HARINISREE.M	M. Harinisree

85	730921121020	HARISHREE.A	A. Harishree
86	730921121021	HEMAPRIYA S	Hemapriya S
87	730921121022	IBRAHEEM.I	Ibrahim
88	730921121023	ILAMATHI.R	Ilamathi R
89	730921121024	IMRANA KHATOON F	F. Imrana khatoon
90	730921121025	KALAISELVAN.S	Kalaiselvan S
91	730921121026	KARTHIK.R	R. Karthik
92	730921121027	KATHIRESAN.R	R. Kathiresan
93	730921121028	KAYAL.M	M. Kayal
94	730921121029	LOKESH KANNAN S	S. Lokesh kannan
95	730921121030	MILAN KUMAR	Milan Kumar
96	730921121031	MOHAMED JASEEL.C.K	C. K. Mohamed Jaseel
97	730921121032	MOHAMED NAFAL	Mohamed Nafal
98	730921121033	MOHTASHIM SAQIB	Mohitashim Saqib
99	730921121034	NAVIN.C	Navin C
100	730921121035	NISHANTHINI.S	S. Nishanthini
101	730921121036	PALANIVELU.M	M. Palanivelu
102	730921121037	PAVITHRA.M	M. Pavithra
103	730921121038	POOVARASAN.G	G. Poovarasan
104	730921121039	PRADUM KUMAR	Pradum Kumar
105	730921121040	PRANAV.N	N. Pranav
106	730921121042	PRAVEEN KUMAR.S	S. Praveen Kumar

Jaly

Course coordinator

Jaly

HOD

85	730921121020	HARISHREE.A	✓	✓	✓	✓	✓	✓	✓	✓
86	730921121021	HEMAPRIYA S	AB	✓	✓	✓	✓	✓	✓	✓
87	730921121022	IBRAHEEM.I	✓	✓	✓	✓	✓	✓	✓	✓
88	730921121023	ILAMATHI.R	✓	✓	✓	✓	✓	✓	✓	✓
89	730921121024	IMRANA KHATOON F	✓	✓	AB	✓	✓	✓	✓	✓
90	730921121025	KALAISELVAN.S	✓	✓	✓	✓	✓	✓	✓	✓
91	730921121026	KARTHIK.R	✓	✓	✓	✓	AB	✓	✓	✓
92	730921121027	KATHIRESAN.R	✓	✓	✓	✓	✓	✓	✓	✓
93	730921121028	KAYAL.M	✓	AB	✓	✓	✓	✓	✓	✓
94	730921121029	LOKESH KANNAN S	✓	✓	✓	✓	✓	✓	✓	✓
95	730921121030	MILAN KUMAR	✓	✓	✓	✓	✓	✓	✓	✓
96	730921121031	MOHAMED JASEEL.C.K	✓	✓	AB	✓	✓	✓	✓	✓
97	730921121032	MOHAMED NAFAL	✓	✓	✓	✓	✓	✓	✓	✓
98	730921121033	MOHTASHIM SAQIB	✓	✓	✓	✓	✓	✓	✓	✓
99	730921121034	NAVIN.C	✓	✓	✓	✓	✓	✓	✓	✓
100	730921121035	NISHANTHINI.S	✓	✓	✓	✓	✓	✓	✓	✓
101	730921121036	PALANIVELU.M	AB	✓	✓	✓	✓	✓	✓	✓
102	730921121037	PAVITHRA.M	✓	✓	✓	✓	✓	AB	✓	✓
103	730921121038	POOVARASAN.G	✓	✓	✓	✓	✓	✓	✓	✓
104	730921121039	PRADUM KUMAR	✓	✓	✓	✓	✓	✓	✓	✓
105	730921121040	PRANAV.N	✓	✓	✓	✓	✓	✓	✓	✓
106	730921121042	PRAVEEN KUMAR.S	✓	✓	✓	✓	✓	✓	✓	AB

[Handwritten Signature]

Course coordinator

[Handwritten Signature]
HOD

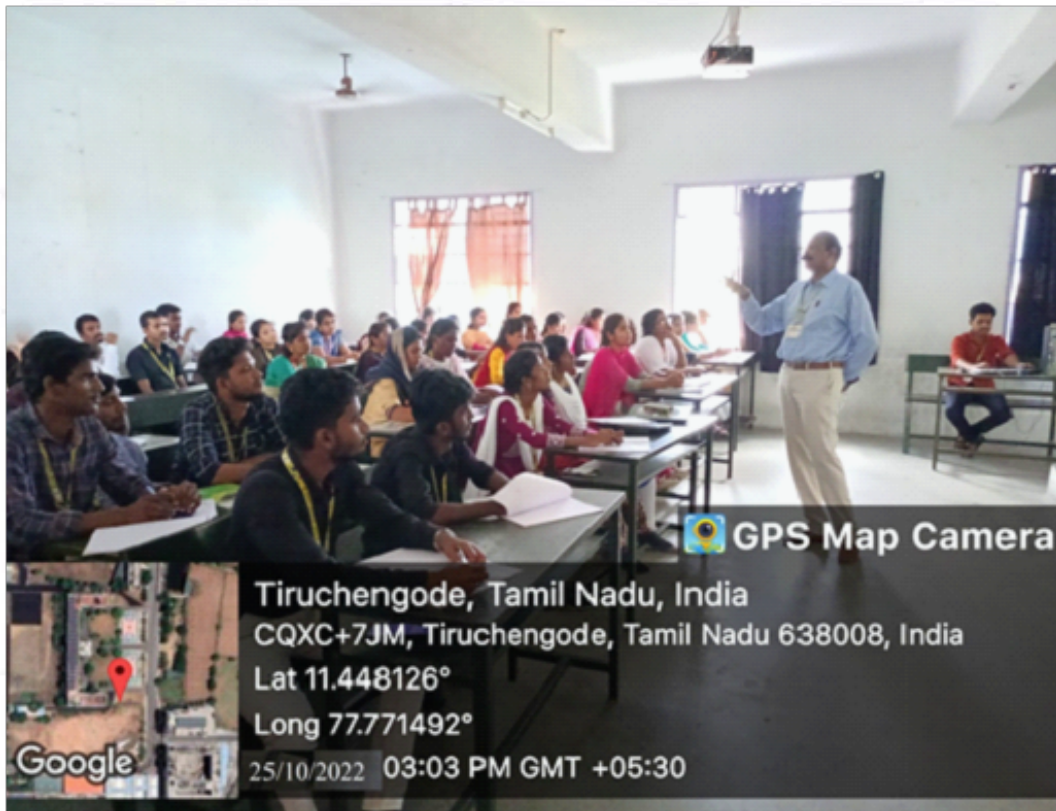


EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
A Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)
KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: 2022-23

Value-added course: MACHINE LEARNING AND BAYESIAN INFERENCE FOR HEALTHCARE APPLICATIONS

PHOTO



Course-Coordinator

HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303

DEPARTMENT OF BIOMEDICAL ENGINEERING

Academic Year: -2022-23

Value-added course: Machine learning and Bayesian inference for healthcare application

TEST QUESTIONS

ANSWER THE ENTIRE QUESTION (10 Marks)

10/10

Name of the student: - Dinesh. G

Q.1. Which of the following statements is true regarding the use of Bayesian Inference in healthcare applications?

- A) Bayesian Inference is primarily used for supervised learning tasks in healthcare.
- B) Bayesian Inference allows for the incorporation of prior knowledge and updates beliefs based on new evidence.
- C) Machine Learning and Bayesian Inference are mutually exclusive and cannot be used together in healthcare.
- D) Bayesian Inference is only applicable to diagnostic tasks and not to treatment recommendations.

Q.2 In Bayesian Inference, what does the term "prior" refer to?

- A) Previous patient medical records.
- B) Initial beliefs or knowledge about a situation before new evidence is considered.
- C) The current state of the patient's health.
- D) The final prediction made by the model.

3. Which type of Machine Learning task is commonly used for predicting whether a patient has a certain medical condition or not?

- A) Unsupervised Learning.
- B) Reinforcement Learning.
- C) Supervised Learning.
- D) Semi-Supervised Learning.

4. How does Bayesian Inference handle uncertainty in healthcare predictions?

- A) It ignores uncertainty, providing deterministic predictions.
- B) It incorporates uncertainty by using probability distributions.
- C) It only works with certain, well-defined medical conditions.
- D) It cannot be applied to uncertain medical situations.

5. Which of the following is an example of a feature in healthcare data?

- A) Patient ID.
- B) Blood pressure measurement.
- C) Hospital name.
- D) All of the above.

6. In the context of healthcare applications, what is "feature engineering" in Machine Learning?

- A) The process of designing medical devices.
- B) The extraction and transformation of relevant information from raw data.
- C) The development of new medical treatments.
- D) The analysis of patient feedback.

7. Which of the following statements about Bayesian Inference is true?

- A) It relies only on current evidence and ignores prior knowledge.
- B) It cannot be applied to continuous variables.
- C) It updates beliefs based on both prior knowledge and new evidence.
- D) It is not suitable for healthcare applications.

8. What is the purpose of a confusion matrix in the evaluation of a healthcare Machine Learning model?

- A) To confuse the model during training.
- B) To visualize the relationships between different variables.
- C) To assess the performance of a classification model.
- D) To measure the processing speed of the model.

9. Which of the following is an example of an unsupervised learning task in healthcare?

- A) Predicting patient outcomes.
- B) Clustering similar patient profiles.
- C) Classifying medical images.
- D) Recommending personalized treatment plans.

10. How does regularization in Machine Learning models contribute to healthcare applications?

- A) It increases model complexity.
- B) It prevents overfitting and enhances generalization.
- C) It has no impact on model performance.
- D) It only works for small datasets.

Course Coordinator

HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303

DEPARTMENT OF BIOMEDICAL ENGINEERING

Academic Year: -2022-23

Value-added course: Machine learning and Bayesian inference for healthcare application

TEST QUESTIONS

ANSWER THE ENTIRE QUESTION (10 Marks)

7/10

Name of the student: - *ASwing. 67*

Q.1. Which of the following statements is true regarding the use of Bayesian Inference in healthcare applications?

- A) Bayesian Inference is primarily used for supervised learning tasks in healthcare.
- B) Bayesian Inference allows for the incorporation of prior knowledge and updates beliefs based on new evidence.
- C) Machine Learning and Bayesian Inference are mutually exclusive and cannot be used together in healthcare.
- D) Bayesian Inference is only applicable to diagnostic tasks and not to treatment recommendations.

Q.2 In Bayesian Inference, what does the term "prior" refer to?

- A) Previous patient medical records.
- B) Initial beliefs or knowledge about a situation before new evidence is considered.
- C) The current state of the patient's health.
- D) The final prediction made by the model.

3. Which type of Machine Learning task is commonly used for predicting whether a patient has a certain medical condition or not?

- A) Unsupervised Learning.
- B) Reinforcement Learning.
- C) Supervised Learning.
- D) Semi-Supervised Learning.

4. How does Bayesian Inference handle uncertainty in healthcare predictions?

- A) It ignores uncertainty, providing deterministic predictions.
- B) It incorporates uncertainty by using probability distributions.
- C) It only works with certain, well-defined medical conditions.
- D) It cannot be applied to uncertain medical situations.

5. Which of the following is an example of a feature in healthcare data?

- A) Patient ID.
- B) Blood pressure measurement.
- C) Hospital name.
- D) All of the above.

6. In the context of healthcare applications, what is "feature engineering" in Machine Learning?

- A) The process of designing medical devices.
- B) The extraction and transformation of relevant information from raw data.
- C) The development of new medical treatments.
- D) The analysis of patient feedback.

7. Which of the following statements about Bayesian Inference is true?

- A) It relies only on current evidence and ignores prior knowledge.
- B) It cannot be applied to continuous variables.
- C) It updates beliefs based on both prior knowledge and new evidence.
- D) It is not suitable for healthcare applications.

8. What is the purpose of a confusion matrix in the evaluation of a healthcare Machine Learning model?

- A) To confuse the model during training.
- B) To visualize the relationships between different variables.
- C) To assess the performance of a classification model.
- D) To measure the processing speed of the model.

9. Which of the following is an example of an unsupervised learning task in healthcare?

- A) Predicting patient outcomes.
- B) Clustering similar patient profiles.
- C) Classifying medical images.
- D) Recommending personalized treatment plans.

10. How does regularization in Machine Learning models contribute to healthcare applications?

- A) It increases model complexity.
- B) It prevents overfitting and enhances generalization.
- C) It has no impact on model performance.
- D) It only works for small datasets.

Course Coordinator

HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303

DEPARTMENT OF BIOMEDICAL ENGINEERING

Academic Year: -2022-23

Value-added course: Machine Learning and Bayesian Inference for Healthcare
Applications

Marks Sheet

S.No.	Register N	Name	Marks
1	730920121001	AARTHI.K	10
2	730920121002	ABINISHA.A	8
3	730920121003	ABIPRIYA.T	9
4	730920121004	ALEN SEBSTAIN	8
5	730920121005	ARAVINTH.N	9
6	730920121006	ASWIN.G	7
7	730920121007	BHUVANESWARI.M	7
8	730920121008	BHUVANESWARI.V	8
9	730920121009	DEEPALAKSHMI.S	9
10	730920121010	DEEPIKA.M	10
11	730920121011	DEVI MEENATCHI.G	8
12	730920121012	DHANUSH.M	8
13	730920121013	DHARUNPRAKASH.S	9
14	730920121014	DHILIPKUMAR.M	7
15	730920121015	DINESH.G	10
16	730920121016	DURKA.M	8
17	730920121017	FAREEN.N	9
18	730920121018	GUNA.S	9
19	730920121019	JANANAYAGAN.S	10
20	730920121020	JANSIRANI.S	10
21	730920121021	JAYA.N	9
22	730920121022	JEEVA.P	7
23	730920121023	JENIN.G	8
24	730920121024	KAVIARASU.V	8
25	730920121025	KAVITHA.P	8
26	730920121027	KAVIYA.S	7
27	730920121028	KISHORE.A	10
28	730920121029	KOKILA.M	9
29	730920121030	KUMAREESAN.S	8
30	730920121032	MADHESHWARAN.P	7
31	730920121033	MAHENDHIRAN.S	9

32	730920121034	MANAV MELVIN.S	
33	730920121035	MANIKANDAN.S	
34	730920121036	MD MUZAMMIL	
35	730920121037	MONIKA.M.P	
36	730920121038	MUGESH.M	
37	730920121039	NILUSIYA RAAI.J	
38	730920121040	PANDIDEVI.T	
39	730920121041	PAVITHRA.M	
40	730920121042	POOVARASAN.N	
41	730920121043	PRIKANTH.G	
42	730920121044	RAJAVELU.V	
43	730920121045	RAMESH.G	
44	730920121046	RAMYA SHRI.S	
45	730920121047	RAQEEB UL	
46	730920121048	MASNAAD.K.M	
47	730920121049	RAUSHANI BHARTI	
48	730920121050	RUBHASRI	
49	730920121052	SABISHEK.R	
50	730920121053	SASIPRAKASH.S	
51	730920121054	SHANMUGAM.M	
52	730920121055	SHOBANA.V	
53	730920121056	SOWMIYA.A.R	
54	730920121057	SUMIT RAJ	
55	730920121058	SWETHA.S	
56	730920121059	THAMARAISELVAN.K	
57	730920121060	VANITHA.M	
58	730920121061	VASANTHA KUMAR.K	
59	730920121062	VELAN.K	
60	730920121063	VIGNESH.A	
61	730920121302	YOGAVATHI.M	
62	730920121301	LOCHANA SHILAL	
63	730920121501	PRIYA R	
64	730920121001	VIKRAHAMBRIDHA E	
65	730920121002	MYTHINI A	
66	730921121001	ABINAYA.K	
67	730921121002	AJAI.S.V	
68	730921121003	AJAY KUMAR.M	
69	730921121004	BALAJI.S	
70	730921121005	BALAMANI.S	
71	730921121006	DHANUSH.K	
72	730921121007	DHANUSRI.J	
73	730921121008	DHARUN SANKAR.M	
74	730921121009	DHIVYA BHARATHI.P	
75	730921121010	DINESH.R	
76	730921121011	DIVYA BHARATHI.R	

77	730921121012	DURAI PANDI.S	8
78	730921121013	GIRI.R	8
79	730921121014	GNANASELVI.R	8
80	730921121015	GOKUL.N	9
81	730921121016	GOPINATH.P	10
82	730921121017	GOWTHAM.S	9
83	730921121018	GURUBARAN.G	8
84	730921121019	HARINISREE.M	9
85	730921121020	HARISHREE.A	10
86	730921121021	HEMAPRIYA S	9
87	730921121022	IBRAHEEM.I	7
88	730921121023	ILAMATHI.R	8
89	730921121024	IMRANA KHATOON F	10
90	730921121025	KALAI SELVAN.S	9
91	730921121026	KARTHIK.R	7
92	730921121027	KATHIRESAN.R	8
93	730921121028	KAYAL.M	9
94	730921121029	LOKESH KANNAN S	8
95	730921121030	MILAN KUMAR	8
96	730921121031	MOHAMED JASEEL.C.K	10
97	730921121032	MOHAMED NAFAL	9
98	730921121033	MOHTASHIM SAQIB	8
99	730921121034	NAVIN.C	10
100	730921121035	NISHANTHINI.S	9
101	730921121036	PALANIVELU.M	8
102	730921121037	PAVITHRA.M	8
103	730921121038	POOVARASAN.G	10
104	730921121039	PRADUM KUMAR	9
105	730921121040	PRANAV.N	9
106	730921121042	PRAVEEN KUMAR.S	8


Course coordinator


HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)
KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: -2022-23

Value-added course: Machine Learning and Bayesian Inference for Healthcare Applications

SUMMARY REPORT

1. Students learned the course in a short period.
2. Students gained knowledge about Bayesian methods, utility in clinical trial optimization, personalized medicine, and decision-making under uncertainty, providing a probabilistic framework for more informed healthcare practices.
3. Assessment was conducted and students performed well.
4. Other faculties also monitored the student's attendance and performance.
5. It was very useful for the placement purpose and their skill development.
6. Most of the students asked many doubts and got clarified.

Course coordinator

HOD



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM – 637303

DEPARTMENT OF BIOMEDICAL ENGINEERING

ACADEMIC YEAR: 2022-2023

Indirect Assessment of Program Outcomes & Program Specific Outcomes through
Curricular and Extracurricular Activities

Student Name: MD MUZAMMIL

Date: 28/10/22

Batch: 2020-2024

Year/Semester: IV / VIII

Type of Activity: Value-added course Machine learning and Bayesian

Organizing Institute: EXCEL ENGINEERING COLLEGE interface for health application

Place: A.P.J HALL

Provide your level of attainment for the following questions ✓ in the given,

[3/2/1 Indicates Level of Attainment; 3 – Very Much, 2 – Moderate, 1 – Some Extent]

1. Does this Activity/ Course improve your Technical Skill?

3 2 1

2. Does this Activity /Course improve your Problem-Solving Skills?

3 2 1

3. Does this training / Course improve your practical Exposure?

3 2 1

4. Have you learned any modern tools through this activity/ training?

Yes No if yes name of tool ECG

5. Is this activity /training useful to improve your professional ethics?

3 2 1

6. Is this activity /training useful to apply for any modern research programs?

3 2 1



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM - 637303

7. Have you got any ideas to improve our environmental & social needs?

3 2 1

8. Have you ever felt that your communication skill & leadership skills have been improved through this activity?

3 2 1

9. Is this Activity/training useful for improving learning attitude with zeal?

3 2 1

10. Is this Activity /training useful for you to work in a multi-disciplinary team?

3 2 1

11. Does this Activity /training improve your mind to face any changes in your life?

3 2 1

Any other Comments:

Md. M. Samudra
Signature



EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM - 637303

DEPARTMENT OF BIOMEDICAL ENGINEERING

ACADEMIC YEAR: 20 22 20 23

Indirect Assessment of Program Outcomes & Program Specific Outcomes through Curricular and Extracurricular Activities

Student Name: JAYA.N

Date: 28/10/22

Batch: 2020-2024

Year/Semester: IV / VII

Type of Activity: Value-added course Machine Learning and Bayesian Interface

Organizing Institute: Excel Engg. College

for health application

Place: A.P.J Hall

Provide your level of attainment for the following questions ✓ in the given,

[3/2/1 Indicates Level of Attainment; 3 - Very Much, 2 - Moderate, 1 - Some Extent]

1. Does this Activity/ Course improve your Technical Skill?

3 2 1

2. Does this Activity /Course improve your Problem-Solving Skills?

3 2 1

3. Does this training / Course improve your practical Exposure?

3 2 1

4. Have you learned any modern tools through this activity/ training?

Yes No if yes name of tool ECG

5. Is this activity /training useful to improve your professional ethics?

3 2 1

6. Is this activity /training useful to apply for any modern research programs?

3 2 1



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM - 637303

7. Have you got any ideas to improve our environmental & social needs?

3

2

1

8. Have you ever felt that your communication skill & leadership skills have been improved through this activity?

3

2

1

9. Is this Activity/training useful for improving learning attitude with zeal?

3

2

1

10. Is this Activity /training useful for you to work in a multi-disciplinary team?

3

2

1

11. Does this Activity /training improve your mind to face any changes in your life?

3

2

1

Any other Comments:

Jayal
Signature



EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM – 637303

DEPARTMENT OF Biomedical Engineering

ACADEMIC YEAR: 20²²-20²³

Indirect Assessment of Program Outcomes & Program Specific Outcomes through Curricular and Extracurricular Activities

Student Name: Kumaresay . S

Date: 28/12/22

Batch: 2020-2024

Year/Semester: /

Type of Activity: Value-added course Machine Learning and Bayesian interface for health application

Organizing Institute: Excel Engineering College

Place: A.P.J Hall

Provide your level of attainment for the following questions ✓ in the given,

[3/2/1 Indicates Level of Attainment; 3 – Very Much, 2 – Moderate, 1 – Some Extent]

1. Does this Activity/ Course improve your Technical Skill?

3 2 1

2. Does this Activity /Course improve your Problem-Solving Skills?

3 2 1

3. Does this training / Course improve your practical Exposure?

3 2 1

4. Have you learned any modern tools through this activity/ training?

Yes No if yes name of tool _____

5. Is this activity /training useful to improve your professional ethics?

3 2 1

6. Is this activity /training useful to apply for any modern research programs?

3 2 1



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f &12B)

KOMARAPALAYAM - 637303

7. Have you got any ideas to improve our environmental & social needs?

3 2 1

8. Have you ever felt that your communication skill & leadership skills have been improved through this activity?

3 2 1

9. Is this Activity/training useful for improving learning attitude with zeal?

3 2 1

10. Is this Activity /training useful for you to work in a multi-disciplinary team?

3 2 1

11. Does this Activity /training improve your mind to face any changes in your life?

3 2 1

Any other Comments:

Rumans Jay
Signature

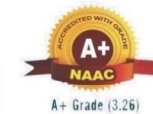


ExcelTM ENGINEERING COLLEGE AUTONOMOUS

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai. Accredited by NBA & NAAC with A+ and Recognized by UGC with 2f&12B

Komarapalayam, Namakkal Dt.

CENTRE FOR TEACHING AND LEARNING &



DEPARTMENT OF BIOMEDICAL ENGINEERING

This is to certify that Mr./ Ms. DEVI MEENATCHI.G of I / II / III / IV year,
Dept of Biomedical Engineering, Excel Engineering College has attended the
Value Added Course on Machine learning and Bayesian inference for healthcare applications
during 25.10.2022 to 28.10.2022

Resource Person : Dr. B. Balasubramanian

Faculty Co Ordinator
Dept of Biomedical Engineering

Head of the Dept
Dept of Biomedical Engineering

Director
Centre for Teaching and Learning

Principal
Excel Engineering College

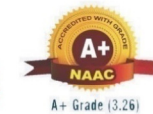


ExcelTM ENGINEERING COLLEGE AUTONOMOUS

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai. Accredited by NBA & NAAC with A+ and Recognized by UGC with 2f&12B

Komarapalayam, Namakkal Dt.

CENTRE FOR TEACHING AND LEARNING &



DEPARTMENT OF BIOMEDICAL ENGINEERING

This is to certify that Mr./ Ms. DEEPIKA. M of I / II / III / IV year,
Dept of Biomedical Engineering, Excel Engineering College has attended the
Value Added Course on Machine learning and Bayesian inference for healthcare applications
during 25.10.2022 to 28.10.2022

Resource Person : Dr. B. Balasubramanian

Faculty Co Ordinator
Dept of Biomedical Engineering

Head of the Dept
Dept of Biomedical Engineering

Director
Centre for Teaching and Learning

Principal
Excel Engineering College



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303

DEPARTMENT OF BIOMEDICAL ENGINEERING

Academic Year: -2022-23

Ref: EEC/BME/VAC/2022-23

Date: 20.01.2023

CIRCULAR

Department of Biomedical Engineering has planned to conduct Value value-added course on "Internet of Things for Healthcare applications" from 03.02.2023 to 04.02.2023 and from 09.02.2023 to 11.02.2023 (30 hours) at the Biomedical Computational Biological Laboratory. Interested students are directed to their name to the respective course coordinator before 30.01.2023.


Course Coordinator


HOD

Copy to

- Notice Board
- Principal
- HOD file



Excel

ENGINEERING COLLEGE (AUTONOMOUS)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, MECH, CSE & ECE), NAAC (A+ Grade- 3.26) and
Recognized by UGC (2f&12B)



B.E. - AERO,
MECH, CSE,
ECE

Date

3, 4, 10
and 11
February
2023
(30 hrs)

Time

9:30 AM –
4.30 PM

DEPARTMENT OF BIOMEDICAL ENGINEERING

Value added course on
“Internet of things for Health care Application”



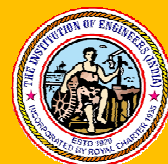
Dr. G. Prakash
Professor /BME, Excel
Engineering College,
Komarapalayam

Dr. Saroj Kumar Sah
AP/BME
Program Co-ordinator

Venue: APJ Abdul Kalam Hall

Dr. Saroj Kumar Sah
Activity Coordinator

Dr. B. Balasubramanian
Head of the Department





EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA, NAAC with "A+" and Recognised by UGC (2f & 12B)
KOMARAPALAYAM - 637303

Department of Biomedical Engineering

Academic Year 2022-23

Value Added Course

INTERNET OF THINGS FOR HEALTH CARE APPLICATION

Course Coordinator: Dr.G.Prakash, Prof/BME

Objective:

The course gives shall provide an overview of latest IoT trends and practical working experience in Arduino board for various applications.

Course Outcome:

After the completion of the course, the students will be able to

CO1: Understand the pros of IoT in modern day life

CO2: Learn programming in microcontroller

CO3: Know hands on experience in designing various IoT applications.

Course Plan

S.No.	Topics	Allotted Hours		Course Instructor
		Theory	Practical	
1.	Understanding IoT fundamentals and IOT Architecture and protocols	2		
2.	Various Platforms for IoT	1		
3.	Real time Examples of IoT	2	2	
4.	Overview of IoT components and IoT Communication Technologies Challenges in IOT	1		
5.	Arduino Simulation Environment	1		
6.	Arduino Uno Architecture and Setup the IDE, Writing Arduino Softwar		3	

7.	Basics of Embedded C programming for Arduino		1	
8.	Interfacing LED, push button		2	
9.	Sensor and Actuators with Arduino			
10.	Overview of Sensors working and Analog and Digital Sensors	2		
11.	Interfacing of Temperature, Humidity, Light and Gas Sensor with Arduino		3	
12.	Interfacing of Actuators with Arduino	2		
13.	Basic Networking with ESP8266 WiFi module	2		
14.	Introduction to ESP8266 Wi-Fi Module	2		
15.	Interfacing ESP8266 with Web services		3	
16.	Applications of health care (Pulse rate, heart rate and ECG)		3	

Text Books:

1. Sudip Misra, Anandarup Mukherjee and Arijit Roy, 'Introduction to IoT', Cambridge university press, 2021,
2. Jeeva Jose, 'Internet of Things', Khanna publishing, 2018

Total Hours to be handled

Theory: 15

Practical: 17

Total: 32


Course Coordinator


HoD/BME



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: -2022-23

Value-added course: Internet of Things for Health Care Application

Student Enrolment List

S. No.	Register No	Name	Signature
1.	730920121002	ABINISHA.A	Abinisha
2.	730920121003	ABIPRIYA.T	Abipriya.T
3.	730920121004	ALEN SEBSTAIN	Alen Sebstein
4.	730920121005	ARAVINTH.N	Aravinth.N
5.	730920121006	ASWIN.G	Aswin.G
6.	730920121007	BHUVANESWARI.M	Bhuvaneshwari.M
7.	730920121008	BHUVANESWARI.V	Bhuvaneshwari.V
8.	730920121009	DEEPALAKSHMI.S	Deepalakshmi.S
9.	730920121010	DEEPIKA.M	Deepika.M
10.	730920121011	DEVI MEENATCHI.G	Devi Meenatchi.G
11.	730920121012	DHANUSH.M	Dhanush.M
12.	730920121013	DHARUNPRAKASH.S	Dharunprakash.S
13.	730920121014	DHILIPKUMAR.M	Dhilipkumar.M
14.	730920121015	DINESH.G	Dinesh.G
15.	730920121016	DURKA.M	Durka.M
16.	730920121017	FAREEN.N	Fareen.N
17.	730920121018	GUNA.S	Guna.S
18.	730920121019	JANANAYAGAN.S	Jananayagan.S
19.	730920121020	JANSIRANI.S	Jansirani.S
20.	730920121021	JAYA.N	Jaya.N
21.	730920121022	JEEVA.P	Jeeva.P
22.	730920121023	JENIN.G	Jenin.G
23.	730920121024	KAVIARASU.V	Kaviarasu.V
24.	730920121025	KAVITHA.P	Kavitha.P
25.	730920121027	KAVIYA.S	Kaviya.S
26.	730920121028	KISHORE.A	Kishore.A
27.	730920121029	KOKILA.M	Kokila.M
28.	730920121030	KUMAREESAN.S	Kumareesan.S
29.	730920121032	MADHESHWARAN.P	Madheshwaran.P
30.	730920121033	MAHENDHIRAN.S	Mahendhiran.S
31.	730920121034	MANAV MELVIN.S	Manav Melvin.S
32.	730920121035	MANIKANDAN.S	Manikandan.S
33.	730920121036	MD MUZAMMIL	MD Muzammil

34.	730920121037	MONIKA.M.P	Monika.M.P.
35.	730920121038	MUGESH.M	Mugesh.M.
36.	730920121039	NILUSIYA RAAI.J	J.N.
37.	730920121040	PANDIDEVI.T	Pandidevi.T
38.	730920121041	PAVITHRA.M	Pavithra.M
39.	730920121042	POOVARASAN.N	Poovarasan.N
40.	730920121043	PRIKANTH.G	Prikanth.G
41.	730920121044	RAJAVELU.V	Rajavelu.V
42.	730920121045	RAMESH.G	Ramesh.G
43.	730920121046	RAMYA SHRI.S	Ramya Sri.S
44.	730920121047	RAQEEB UL	Raqeeb Ul
45.	730920121048	MASNAAD.K.M	Masnaad.K.M
46.	730920121049	RAUSHANI BHARTI	Raushani Bharti
47.	730920121050	RUBHASRI	Rubhasri
48.	730920121052	SABISHEK.R	Sabishek.R
49.	730920121053	SASIPRAKASH.S	Sasiprakash.S
50.	730920121054	SHANMUGAM.M	Shanmugam.M
51.	730920121055	SHOBANA.V	Shobana.V
52.	730920121056	SOWMIYA.A.R	Sowmiya.A.R
53.	730920121057	SUMIT RAJ	Sumit Raj
54.	730920121058	SWETHA.S	Swetha.S
55.	730920121059	THAMARAISELVAN. K	K.Thamara
56.	730920121060	VANITHA.M	M.Vas.
57.	730920121061	VASANTHA KUMAR.K	Vasanthakumar.K
58.	730920121062	VELAN.K	K.Velan
59.	730920121063	VIGNESH.A	A.Vignesh
60.	730920121302	YOGAVATHI.M	Yogavathi.M
61.	730920121301	LOCHANA SHILAL	Lochana Shilal
62.	730920121501	PRIYA R	Priya.R
63.	730920121001	VIKRAHAMBRIDHA E	Vikramabridha.E
64.	730920121002	MYTHINI A	Mythini.A
65.	730921121001	ABINAYA.K	K.Abinaya
66.	730921121002	AJAI.S.V	Ajai.S.V
67.	730921121003	AJAY KUMAR.M	Ajay Kumar.M
68.	730921121004	BALAJI.S	S.Balaji
69.	730921121005	BALAMANI.S	S.Balamani
70.	730921121006	DHANUSH.K	K.Dhanush
71.	730921121007	DHANUSRI.J	J.Dhanusri
72.	730921121008	DHARUN SANKAR.M	M.Dharun
73.	730921121009	DHIVYA BHARATHI.P	P.Dhivya
74.	730921121010	DINESH.R	R.Dinesh
75.	730921121011	DIVYA BHARATHI.R	R.Divya
76.	730921121012	DURAI PANDI.S	S.Durai Pandi
77.	730921121013	GIRI.R	R.Giri
78.	730921121014	GNANASELVI.R	R.Gnanaseelvi
79.	730921121015	GOKUL.N	N.Gokul
80.	730921121016	GOPINATH.P	P.Gopinath
81.	730921121017	GOWTHAM.S	S.Gowtham

82.	730921121018	GURUBARAN.G	
83.	730921121019	HARINISREE.M	Harinisee
84.	730921121020	HARISHREE.A	Harishree
85.	730921121021	HEMAPRIYA S	Hemapriya
86.	730921121022	IBRAHEEM.I	Ibraheem
87.	730921121023	ILAMATHI.R	Ilamathi
88.	730921121024	IMRANA KHATOON F	F. Imrana Khatoon
89.	730921121025	KALAISELVAN.S	S. Kalaiselvan
90.	730921121026	KARTHIK.R	R. Karthik
91.	730921121027	KATHIRESAN.R	R. Kathiresan
92.	730921121028	KAYAL.M	Kayal
93.	730921121029	LOKESH KANNAN S	S. Lokesh
94.	730921121030	MILAN KUMAR	Milan Kumar
95.	730921121031	MOHAMED JASEEL.C.K	C.K. Mohamed
96.	730921121032	MOHAMED NAFAL	Mohamed Nafal
97.	730921121033	MOHTASHIM SAQIB	Mohd Ashim Saqib
98.	730921121034	NAVIN.C	Navin
99.	730921121035	NISHANTHINI.S	S. Nishanthini
100.	730921121036	PALANIVELU.M	M. Palanivelu
101.	730921121037	PAVITHRA.M	M. Pavithra
102.	730921121038	POOVARASAN.G	Poovarasana G.
103.	730921121039	PRADUM KUMAR	Pradum Kumar
104.	730921121040	PRANAV.N	Pranav N.
105.	730921121042	PRAVEEN KUMAR.S	Praveen Kumar S
106.	730921122055	UJJAWAL KUMAR	Ujjawal
107.	730921122056	UJJWAL KUMAR TIWARI	Ujjawal Tiwari
108.	730921122057	VIJAY.A	Vijay A.
109.	730921122058	VIMAL.D	Vimal D.
110.	730921122059	VINOMATHI.A	Vinoma


Course coordinator


HOD

82.	730921121018	GURUBARAN.G	✓	✓	Ab	✓	✓	✓	✓	✓
83.	730921121019	HARINISREE.M	✓	✓	✓	✓	✓	✓	✓	✓
84.	730921121020	HARISHREE.A	✓	✓	✓	✓	✓	✓	✓	✓
85.	730921121021	HEMAPRIYA S	✓	✓	✓	✓	✓	✓	✓	✓
86.	730921121022	IBRAHEEM.I	Ab	✓	✓	✓	✓	✓	✓	✓
87.	730921121023	ILAMATHI.R	✓	✓	✓	✓	✓	✓	✓	✓
88.	730921121024	IMRANA KHATOON F	✓	✓	✓	✓	✓	✓	Ab	✓
89.	730921121025	KALAISELVAN.S	✓	✓	✓	✓	✓	✓	✓	✓
90.	730921121026	KARTHIK.R	✓	✓	✓	✓	✓	✓	✓	✓
91.	730921121027	KATHIRESAN.R	✓	✓	✓	✓	✓	✓	✓	✓
92.	730921121028	KAYAL.M	✓	✓	✓	✓	✓	✓	✓	✓
93.	730921121029	LOKESH KANNAN S	✓	✓	✓	✓	✓	✓	✓	✓
94.	730921121030	MILAN KUMAR	✓	✓	✓	✓	✓	✓	✓	✓
95.	730921121031	MOHAMED JASEEL.C.K	✓	✓	✓	Ab	✓	✓	✓	✓
96.	730921121032	MOHAMED NAFAL	✓	✓	✓	✓	✓	✓	✓	✓
97.	730921121033	MOHTASHIM SAQIB	✓	✓	✓	✓	✓	✓	✓	✓
98.	730921121034	NAVIN.C	✓	✓	✓	✓	✓	✓	✓	✓
99.	730921121035	NISHANTHINI.S	✓	✓	✓	✓	✓	✓	✓	✓
100.	730921121036	PALANIVELU.M	✓	✓	✓	✓	✓	✓	✓	✓
101.	730921121037	PAVITHRA.M	✓	✓	✓	✓	✓	✓	✓	✓
102.	730921121038	POOVARASAN.G	✓	✓	✓	✓	✓	✓	✓	✓
103.	730921121039	PRADUM KUMAR	✓	✓	✓	✓	✓	✓	Ab	✓
104.	730921121040	PRANAV.N	✓	✓	✓	✓	✓	✓	✓	✓
105.	730921121042	PRAVEEN KUMAR.S	✓	✓	✓	✓	✓	✓	✓	✓
106.	730921122055	UJJAWAL KUMAR	✓	✓	✓	✓	✓	✓	✓	✓
107.	730921122056	UJJWAL KUMAR TIWARI	✓	✓	✓	✓	✓	✓	✓	✓
108.	730921122057	VIJAY.A	✓	✓	✓	✓	✓	✓	✓	✓
109.	730921122058	VIMAL.D	✓	✓	✓	✓	✓	✓	✓	✓
110.	730921122059	VINOMATHI.A	✓	✓	✓	✓	✓	✓	✓	✓


Course coordinator


HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

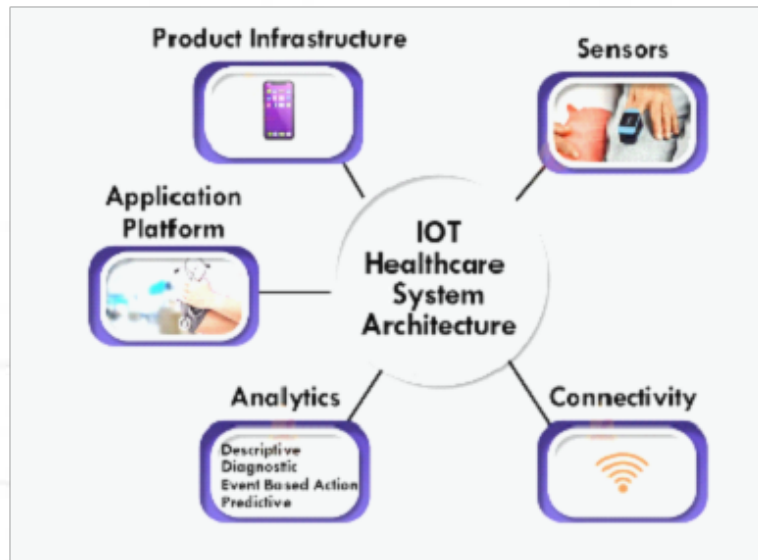
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f &12B)

KOMARAPALAYAM-637303

Department of Biomedical Engineering

PHOTOS

Value-added course: Internet of Things (IoT) for Health Care Applications





BQ

EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: -2022-23

Value-added course: Internet of Things for Health Care Application

TEST QUESTIONS

10
10

ANSWER THE ENTIRE QUESTION (10 Marks)

Name of the student: Aarthi . K

1. What does IoT stand for?

- A) Internet of Textures B) Internet of Things C) Internet of Thinking D) Internet of Time

2. Which of the following is NOT a potential application of IoT in healthcare?

- A) Remote patient monitoring B) Smart pill bottles for medication adherence
 C) Weather forecasting D) Wearable fitness trackers

3. Which technology is commonly used for wireless communication between IoT devices in healthcare applications?

- A) Bluetooth B) NFC (Near Field Communication)
C) RFID (Radio-Frequency Identification) D) All of the above

4. What is one of the primary concerns regarding data security in IoT healthcare applications?

- A) Compatibility issues B) Battery life
 C) Data encryption and privacy D) Device size

5. Which regulatory standard is particularly relevant to protecting patient data in healthcare IoT applications in the United States?

- A) GDPR (General Data Protection Regulation) B) ISO 9001
 C) HIPAA (Health Insurance Portability and Accountability Act)
D) SOC 2 (Service Organization Control 2)

6. What type of analytics can be applied to IoT data to predict potential health issues in patients?

- A) Descriptive analytics
- B) Diagnostic analytics
- C) Predictive analytics
- D) Prescriptive analytics

7. Which of the following is an example of a wearable IoT device for health monitoring?

- A) Smart thermostat
- B) Smartwatch with heart rate monitor
- C) Smart coffee maker
- D) Smart doorbell

8. What does RFID stand for in the context of IoT healthcare applications?

- A) Radio Frequency Inference Detector
- B) Rapid Feedback and Identification
- C) Remote Frequency Identification
- D) Radio-Frequency Identification

9. Which of the following is NOT a benefit of using IoT in healthcare?

- A) Improved patient outcomes
- B) Reduced costs
- C) Decreased data security
- D) Enhanced patient engagement

10. What is a key consideration when designing IoT devices for elderly patients with limited technical expertise?

- A) Battery life
- B) Device complexity
- C) Data encryption
- D) Device weight


Course Coordinator


HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303

DEPARTMENT OF BIOMEDICAL ENGINEERING

Academic Year: -2022-23

Value-added course: Internet of Things for Health Care Application

TEST QUESTIONS

ANSWER THE ENTIRE QUESTION (10 Marks)

Name of the student: JAYAN

8
10

1. What does IoT stand for?

- A) Internet of Textures B) Internet of Things C) Internet of Thinking D) Internet of Time

2. Which of the following is NOT a potential application of IoT in healthcare?

- A) Remote patient monitoring B) Smart pill bottles for medication adherence
C) Weather forecasting D) Wearable fitness trackers

3. Which technology is commonly used for wireless communication between IoT devices in healthcare applications?

- A) Bluetooth B) NFC (Near Field Communication)
C) RFID (Radio-Frequency Identification) D) All of the above

4. What is one of the primary concerns regarding data security in IoT healthcare applications?

- A) Compatibility issues B) Battery life
 C) Data encryption and privacy D) Device size

5. Which regulatory standard is particularly relevant to protecting patient data in healthcare IoT applications in the United States?

- A) GDPR (General Data Protection Regulation) B) ISO 9001
 C) HIPAA (Health Insurance Portability and Accountability Act)
D) SOC 2 (Service Organization Control 2)

6. What type of analytics can be applied to IoT data to predict potential health issues in patients?

- A) Descriptive analytics B) Diagnostic analytics
 C) Predictive analytics D) Prescriptive analytics

7. Which of the following is an example of a wearable IoT device for health monitoring?

- A) Smart thermostat B) Smartwatch with heart rate monitor
 C) Smart coffee maker D) Smart doorbell

8. What does RFID stand for in the context of IoT healthcare applications?

- A) Radio Frequency Inference Detector B) Rapid Feedback and Identification
 C) Remote Frequency Identification D) Radio-Frequency Identification

9. Which of the following is NOT a benefit of using IoT in healthcare?

- A) Improved patient outcomes B) Reduced costs
 C) Decreased data security D) Enhanced patient engagement

10. What is a key consideration when designing IoT devices for elderly patients with limited technical expertise?

- A) Battery life B) Device complexity
 C) Data encryption D) Device weight


Course Coordinator


HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: 2022-23

Value-added course: Internet of Things for Health care application

Marks Sheet

S.No.	Register N	Name	Marks
1	730920121001	AARTHI.K	10
2	730920121002	ABINISHA.A	10
3	730920121003	ABIPRIYA.T	9
4	730920121004	ALEN SEBSTAIN	8
5	730920121005	ARAVINTH.N	8
6	730920121006	ASWIN.G	9
7	730920121007	BHUVANESWARI.M	9
8	730920121008	BHUVANESWARI.V	10
9	730920121009	DEEPALAKSHMI.S	9
10	730920121010	DEEPIKA.M	8
11	730920121011	DEVI MEENATCHI.G	8
12	730920121012	DHANUSH.M	9
13	730920121013	DHARUNPRAKASH.S	8
14	730920121014	DHILIPKUMAR.M	9
15	730920121015	DINESH.G	8
16	730920121016	DURKA.M	7
17	730920121017	FAREEN.N	9
18	730920121018	GUNA.S	8
19	730920121019	JANANAYAGAN.S	10
20	730920121020	JANSIRANI.S	10
21	730920121021	JAYA.N	8
22	730920121022	JEEVA.P	8
23	730920121023	JENIN.G	8
24	730920121024	KAVIARASU.V	9
25	730920121025	KAVITHA.P	9
26	730920121027	KAVIYA.S	8
27	730920121028	KISHORE.A	9
28	730920121029	KOKILA.M	10
29	730920121030	KUMAREESAN.S	9
30	730920121032	MADHESHWARAN.P	8
31	730920121033	MAHENDHIRAN.S	9
32	730920121034	MANAV MELVIN.S	9
33	730920121035	MANIKANDAN.S	10
34	730920121036	MD MUZAMMIL	9

35	730920121037	MONIKA.M.P	10
36	730920121038	MUGESH.M	9
37	730920121039	NILUSIYA RAAI.J	9
38	730920121040	PANDIDEVI.T	8
39	730920121041	PAVITHRA.M	5
40	730920121042	POOVARASAN.N	8
41	730920121043	PRIKANTH.G	9
42	730920121044	RAJAVELU.V	8
43	730920121045	RAMESH.G	9
44	730920121046	RAMYA SHRI.S	8
45	730920121047	RAQEEB UL	9
46	730920121048	MASNAAD.K.M	8
47	730920121049	RAUSHANI BHARTI	9
48	730920121050	RUBHASRI	9
49	730920121052	SABISHEK.R	9
50	730920121053	SASIPRAKASH.S	8
51	730920121054	SHANMUGAM.M	8
52	730920121055	SHOBANA.V	7
53	730920121056	SOWMIYA.A.R	7
54	730920121057	SUMIT RAJ	10
55	730920121058	SWETHA.S	10
56	730920121059	THAMARAISELVAN.K	8
57	730920121060	VANITHA.M	9
58	730920121061	VASANTHA KUMAR.K	9
59	730920121062	VELAN.K	9
60	730920121063	VIGNESH.A	8
61	730920121302	YOGAVATHI.M	8
62	730920121301	LOCHANA SHILAL	7
63	730920121501	PRIYA R	9
64	730920121001	VIKRAHAMBRIDHA E	9
65	730920121002	MYTHINI A	8
66	730921121001	ABINAYA.K	8
67	730921121002	AJAI.S.V	10
68	730921121003	AJAY KUMAR.M	10
69	730921121004	BALAJI.S	8
70	730921121005	BALAMANI.S	9
71	730921121006	DHANUSH.K	5
72	730921121007	DHANUSRI.J	9
73	730921121008	DHARUN SANKAR.M	9
74	730921121009	DHIVYA BHARATHI.P	9
75	730921121010	DINESH.R	8
76	730921121011	DIVYA BHARATHI.R	8
77	730921121012	DURAI PANDI.S	10
78	730921121013	GIRI.R	10
79	730921121014	GNANASELVI.R	7
80	730921121015	GOKUL.N	7
81	730921121016	GOPINATH.P	9
82	730921121017	GOWTHAM.S	8

83	730921121018	GURUBARAN.G	8
84	730921121019	HARINISREE.M	8
85	730921121020	HARISHREE.A	9
86	730921121021	HEMAPRIYA S	9
87	730921121022	IBRAHEEM.I	10
88	730921121023	ILAMATHI.R	9
89	730921121024	IMRANA KHATOON F	10
90	730921121025	KALAISELVAN.S	9
91	730921121026	KARTHIK.R	8
92	730921121027	KATHIRESAN.R	9
93	730921121028	KAYAL.M	10
94	730921121029	LOKESH KANNAN S	10
95	730921121030	MILAN KUMAR	9
96	730921121031	MOHAMED JASEEL.C.K	8
97	730921121032	MOHAMED NAFAL	7
98	730921121033	MOHTASHIM SAQIB	8
99	730921121034	NAVIN.C	9
100	730921121035	NISHANTHINI.S	10
101	730921121036	PALANIVELU.M	9
102	730921121037	PAVITHRA.M	8
103	730921121038	POOVARASAN.G	7
104	730921121039	PRADUM KUMAR	8
105	730921121040	PRANAV.N	9
106	730921121042	PRAVEEN KUMAR.S	10
107	730921122056	UJJWAL KUMAR TIWARI	9
108	730921122057	VIJAY.A	8
109	730921122058	VIMAL.D	7
110	730921122059	VINOMATHI.A	8


Course Coordinator


HOD



EXCEL ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f &12B)

KOMARAPALAYAM-637 303
DEPARTMENT OF BIOMEDICAL ENGINEERING
Academic Year: -2022-23

Value-added course: Internet of Things for Health Care Application

SUMMARY REPORT

1. Students learned the course in a short period.
2. Students gained knowledge about understanding the basics of IoT technology, data analytics, data implementation, and its application in healthcare settings, including sensor technologies, data transmission protocols, and device integration.
3. Assessment was conducted and students performed well.
4. Other faculties also monitored the student's attendance and performance.
5. It was very useful for the placement purpose and for their skill development.
6. Most of the students asked many doubts and got clarified.


Course-Coordinator


HOD

Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM – 637303

DEPARTMENT OF BIOMEDICAL ENGINEERING

ACADEMIC YEAR: 2022-2023

Indirect Assessment of Program Outcomes & Program Specific Outcomes through
Curricular and Extracurricular Activities

Student Name: Sumit Roy
Batch: 2020 - 2024

Date: 11/02/2022
Year/Semester: Final VIII

Type of Activity: Value-added course: Internet of things for health care application.
Organizing Institute: Excel Engineering College

Place: APJ Hall.

Provide your level of attainment for the following questions ✓ in the given,

[3/2/1 Indicates Level of Attainment; 3 – Very Much, 2 – Moderate, 1 – Some Extent]

1. Does this Activity/ Course improve your Technical Skill?

3 2 1

2. Does this Activity /Course improve your Problem-Solving Skills?

3 2 1

3. Does this training / Course improve your practical Exposure?

3 2 1

4. Have you learned any modern tools through this activity/ training?

Yes No if yes name of tool _____

5. Is this activity /training useful to improve your professional ethics?

3 2 1

6. Is this activity /training useful to apply for any modern research programs?

3 2 1



Feedback on Activity EEC/IOAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM - 637303

7. Have you got any ideas to improve our environmental & social needs?

3 2 1

8. Have you ever felt that your communication skill & leadership skills have been improved through this activity?

3 2 1

9. Is this Activity/training useful for improving learning attitude with zeal?

3 2 1

10. Is this Activity /training useful for you to work in a multi-disciplinary team?

3 2 1

11. Does this Activity /training improve your mind to face any changes in your life?

3 2 1

Any other Comments:

Now a days Internet is basic and common need of human life. So, we need more collaboration of healthcare on internet which enhance the human life.


Signature



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM – 637303

DEPARTMENT OF Biomedical Engineering

ACADEMIC YEAR: 20 - 20

Indirect Assessment of Program Outcomes & Program Specific Outcomes through
Curricular and Extracurricular Activities

Student Name: Dhileekumar M
Batch: 2020 - 2024

Date: 11/02/23
Year/Semester: IV / VII

Type of Activity: Value-added course Internet of things for health care application
Organizing Institute: Excel Engg. College
Place: A. P. J Hall

Provide your level of attainment for the following questions ✓ in the given,

[3/2/1 Indicates Level of Attainment; 3 – Very Much, 2 – Moderate, 1 – Some Extent]

1. Does this Activity/ Course improve your Technical Skill?

3 2 1

2. Does this Activity /Course improve your Problem-Solving Skills?

3 2 1

3. Does this training / Course improve your practical Exposure?

3 2 1

4. Have you learned any modern tools through this activity/ training?

Yes No if yes name of tool _____

5. Is this activity /training useful to improve your professional ethics?

3 2 1

6. Is this activity /training useful to apply for any modern research programs?

3 2 1



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM - 637303

7. Have you got any ideas to improve our environmental & social needs?

3 2 1

8. Have you ever felt that your communication skill & leadership skills have been improved through this activity?

3 2 1

9. Is this Activity/training useful for improving learning attitude with zeal?

3 2 1

10. Is this Activity /training useful for you to work in a multi-disciplinary team?

3 2 1

11. Does this Activity /training improve your mind to face any changes in your life?

3 2 1

Any other Comments:


Signature



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM – 637303

DEPARTMENT OF _____

ACADEMIC YEAR: 20 - 20

Indirect Assessment of Program Outcomes & Program Specific Outcomes through
Curricular and Extracurricular Activities

Student Name: KOKILA.M

Date: 11/02/2023

Batch: 2020-2024

Year/Semester: 3 / 6

Type of Activity: Value-added course *intimate of things for health care*

Organizing Institute: EXCEL ENGINEERING COLLEGE

Place: APJ HALL

Provide your level of attainment for the following questions ✓ in the given,

[3/2/1 Indicates Level of Attainment; 3 – Very Much, 2 – Moderate, 1 – Some Extent]

1. Does this Activity/ Course improve your Technical Skill?

3 2 1

2. Does this Activity /Course improve your Problem-Solving Skills?

3 2 1

3. Does this training / Course improve your practical Exposure?

3 2 1

4. Have you learned any modern tools through this activity/ training?

Yes No if yes name of tool _____

5. Is this activity /training useful to improve your professional ethics?

3 2 1

6. Is this activity /training useful to apply for any modern research programs?

3 2 1



Feedback on Activity EEC/IQAC/Feedback/Form
EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA (AERO, CSE, ECE, MECH), NAAC with "A+" and Recognised by UGC (2f & 12B)

KOMARAPALAYAM - 637303

7. Have you got any ideas to improve our environmental & social needs?

3 2 1

8. Have you ever felt that your communication skill & leadership skills have been improved through this activity?

3 2 1

9. Is this Activity/training useful for improving learning attitude with zeal?

3 2 1

10. Is this Activity /training useful for you to work in a multi-disciplinary team?

3 2 1

11. Does this Activity /training improve your mind to face any changes in your life?

3 2 1

Any other Comments:

Kavilam
Signature

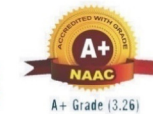


ExcelTM ENGINEERING COLLEGE AUTONOMOUS

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai. Accredited by NBA & NAAC with A+ and Recognized by UGC with 2f&12B

Komarapalayam, Namakkal Dt.

CENTRE FOR TEACHING AND LEARNING &



DEPARTMENT OF BIOMEDICAL ENGINEERING

This is to certify that Mr./ Ms. ARAVINTH N of I / II / III / IV year,
Dept of BIOMEDICAL ENGINEERING, Excel Engineering College has attended the
Value Added Course on INTERNET OF THINGS FOR HEALTH CARE APPLICATION"
during 3, 4, 10 AND 11 FEBRUARY 2023 (30 HRS)

Resource Person : DR. G. PRAKASH., PROFESSOR/BME

Faculty Co Ordinator
Dept of Biomedical Engineering

Head of the Dept
Dept of Biomedical Engineering

Director
Centre for Teaching and Learning

Principal
Excel Engineering College

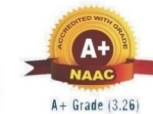


ExcelTM ENGINEERING COLLEGE AUTONOMOUS

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai. Accredited by NBA & NAAC with A+ and Recognized by UGC with 2f&12B

Komarapalayam, Namakkal Dt.

CENTRE FOR TEACHING AND LEARNING &



DEPARTMENT OF BIOMEDICAL ENGINEERING

This is to certify that Mr./ Ms. AARTHI K of I / II / III / IV year,
Dept of BIOMEDICAL ENGINEERING, Excel Engineering College has attended the
Value Added Course on INTERNET OF THINGS FOR HEALTH CARE APPLICATION"
during 3, 4, 10 AND 11 FEBRUARY 2023 (30 HRS)

Resource Person : DR. G. PRAKASH., PROFESSOR/BME

Faculty Co Ordinator
Dept of Biomedical Engineering

Head of the Dept
Dept of Biomedical Engineering

Director
Centre for Teaching and Learning

Principal
Excel Engineering College