Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)
BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY
No.173, Agherem Road, Selaiyur, Chennai , T.N - 600 073.

Requisition Letter

Date:03.08.2020

From
Dr. K.P.Kaliyamurthie,
Professor & Head,
Department of CSE,
Bharath Institute of Higher Education and Research,
Chennai

To
The Dean Engineering,
Bharath Institute of Higher Education and Research,
Chennai

Respected sir

Subject: Request of Permission to conduct a value-added course on " **Short term course on Fuzzy Sets And its Application** "**(online)** -Reg

With reference to above subject, I would like to bring to your kind notice that, our department interested to organize value added course on **"Short term course on Fuzzy Sets And its Application"** in our campus premises on **11.08.2020** , students would be participating in this course. We request you kindly to give permission to organize this event.

Timing : 9:30 AM to 12:30 PM (FN) and 1:30 PM to 4:30 PM(AN) and Saturday (FN&AN).

Submitted to Principal for approval to organize this value-added course.

HOD

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute Of Higher Education & Research
(Declared as Deemed to be University U/S 3 Of UGC Act, 1956)
Chennai - 600 073. INDIA

DEAN ENGINEERING

DEAN (Engineering)
Bharath Institute of Science & Technology
BHARATH INSTITUTE OF HIGHER EDUCATION & RESEARCH
(Declared as Deemed to be University U/S 3 of UGC Act, 1956)
Selaiyur, Chennai-600 073.

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act 1956)

CIRCULAR

05.08.2020

The school of computing, Bharath Institute of Higher Education and Research is planned to conduct a certification value added course on **Short term course on Fuzzy Sets And its Application** for the benefit of students. This course is scheduled from 11.08.2020 to 18.08.2020. The timings are 9:30 AM to 12:30 PM (FN) and 1:30 PM to 4:30 PM(AN) and Saturday (FN&AN).

All Registered Students must attend all the classes without fail. The following faculty members are assigned to handle the course. S.NO	**Name of the Faculty**	**Designation**
1	Dr. C. Rajabhushanam	Professor
2	Mrs. C. Anuradha	Assistant Professor

Head of Department

To

Copy to CSE

Copy to IT

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute Of Higher Education & Research
(Declared as Deemed to be University U/S 3 Of UGC Act, 1956)
Chennai - 600 073. INDIA

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act 1956)

CERTIFICATE COURSE ON Short term course on Fuzzy Sets And its Application

Date of Introduction of the Course: 03.09.2020

COURSE SYLLABUS

1. Introduction and Fuzzy Sets Theory

Fuzzy set theory permits membership function valued

2. Membership Functions

Fuzzy sets theory is an extension of classical set theory

3. Set Theoretic Operations

The symbol ∪ is employed to denote the union of two sets. Thus, the set A ∪ B—read "A union B" or "the union.

4. Fuzzy Arithmetic

Explains the communication of statistical results correctly.

5. Fuzzy Relations

A fuzzy relation is the Cartesian product of mathematical fuzzy sets.

6. Fuzzy Inference Systems I

Fuzzy Inference System is the key unit of a fuzzy logic system having decision making as its primary work. It uses the "IF…THEN" rules along with connectors...

7. Fuzzy Inference Systems II

Fuzzy inference systems, input values are fuzzified by finding the corresponding degree of membership in both the UMFs and LMFs from the rule

8 Wang and Mendel Model

The Wang-Mendel (WM) modelling method is capable of extracting fuzzy rules from data directly without any prior knowledge

9. TSK Model

We propose to generalize TSK fuzzy model applying nonlinear functions in the rule consequences.

10. Fusiliers and Defuzzifiers

Fuzzification is the process of converting a clear input to a fuzzy value. It converts a clear point price of the process state variable

11 ANFIS Architecture

Inference system corresponds to a set of fuzzy IF–THEN rules that have learning capability to approximate nonlinear functions

12. Fuzzy Systems and Machine Learning

Fuzzy logic is used in Natural language processing and various intensive applications.

COURSE OBJECTIVES

To learn and analyse and visualize data in **Understand the concept of fuzziness involved in various systems** and fuzzy set theory. **Specifically, the course has the following objectives:**

Students will learn

1. Understanding Fuzzy Inference Systems I
2. Understanding Fuzzy Inference Systems II.
3. Fuzzy Relations
4. Create Set Theoretic Operations
5. Fuzzy logic system is capable of providing the most effective solution to complex issues
6. Fuzzy system helps in dealing engineering uncertainties.

COURSE COORDINATOR

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute Of Higher Education & Research
(Declared as Deemed to be University U/S 3 Of UGC Act, 1956,
Chennai - 600 073. INDIA

11	17-08-2020 (FN)	**Fusiliers and Defuzzifiers** Fuzzification is the process of converting a clear input to a fuzzy value. It converts a clear point price of the process state variable
12	18-08-2020 (FN)	**ANFIS Architecture** Inference system corresponds to a set of fuzzy IF–THEN rules that have learning capability to approximate nonlinear functions
13	18-08-2020 (FN)	**Fuzzy Systems and Machine Learning** Fuzzy logic is used in Natural language processing and various intensive applications.

C. Anuradha.

COURSE COORDINATOR

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute Of Higher Education & Research
(Declared as Deemed to be University U/S 3 Of UGC Act, 1956)
Chennai - 600 073. INDIA

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act 1956)

CERTIFICATE COURSE Short term course on Fuzzy Sets And its Application

Date of Introduction of the Course: 03.09.2020

The timings are 9:30 AM to 12:30 PM (FN) and 1:30 PM to 4:30 PM(AN) Saturday (FN&AN).

Time Table & Lesson plan

CLASS	DATE	TOPIC
1	11-08-2020(FN)	**Introduction and Fuzzy Sets Theory** Fuzzy set theory permits membership function valued
2	12-08-2020 (FN)	**Membership Functions** Fuzzy sets theory is an extension of classical set theory
3	12-08-2020 (FN)	**Set Theoretic Operation** The symbol ∪ is employed to denote the union of two sets. Thus, the set A ∪ B—read "A union B" or "the union.
4	13-08-2020 (FN)	**Fuzzy Arithmetic** Explains the communication of statistical results correctly.
5	13-08-2020 (FN)	**Fuzzy Relations** A fuzzy relation is the Cartesian product of mathematical fuzzy sets.
6	14-08-2020 (FN)	**Fuzzy Inference Systems I** Fuzzy Inference System is the key unit of a fuzzy logic system having decision making as its primary work. It uses the "IF…THEN" rules along with connectors
7,8	15-08-2020 (FN&AN)	**Fuzzy Inference Systems II** Fuzzy inference systems, input values are fuzzified by finding the corresponding degree of membership in both the UMFs and LMFs from the rule
9	17-08-2020 (FN)	**Wang and Mendel Model** The Wang-Mendel (WM) modelling method is capable of extracting fuzzy rules from data directly without any prior knowledge.
10	17-08-2020 (FN)	**TSK Model** Generalize TSK fuzzy model applying nonlinear functions in the rule consequences.

11	17-08-2020 (FN)	**Fusiliers and Defuzzifiers** Fuzzification is the process of converting a clear input to a fuzzy value. It converts a clear point price of the process state variable
12	18-08-2020 (FN)	**ANFIS Architecture** Inference system corresponds to a set of fuzzy IF–THEN rules that have learning capability to approximate nonlinear functions
13	18-08-2020 (FN)	**Fuzzy Systems and Machine Learning** Fuzzy logic is used in Natural language processing and various intensive applications.

C. Anuradha

COURSE COORDINATOR

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute Of Higher Education & Research
(Declared as Deemed to be University U/S 3 Of UGC Act, 1956)
Chennai - 600 073. INDIA

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act, 1956)
(Vide Notification No. F.9-5/2000 - U.3, Ministry of Human Resource Development, Govt. of India, dated 4th July 2002)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date of Introduction of the Course: 03.09.2020

B.Tech Computer Science and Engineering

Introduction to Short term course on fuzzy Sets And its Applications

S. No	REG.NO	NAME OF THE CANDIDATE
1	U15CS032	CHANDRA KANT CHOUDHARY
2	U15CS033	CHAPPIDI LAKSHMIKANTH REDDY
3	U15CS034	CHIDIPOTHU PRATHYUSHA
4	U15CS035	CHINTAGINJALA VENKATA SRI SAI SRAVYA
5	U15CS036	CHOWDHARY PRASANNA KUMAR
6	U15CS037	CHUNDI VENKATA SESHASAI RAMANAPATANJALI
7	U15CS038	CILLA SAI KISHORE
8	U15CS039	D N S HRUDAY BHARADWAJ
9	U15CS040	DADAM CHAITHRA
10	U15CS041	DEEPAK KUMAR SINGH
11	U15CS042	DILLIGANESH V
12	U15CS043	DIVAKAR M
13	U15CS044	DIVYA VANI T
14	U15CS045	DODDI PUJITHA
15	U15CS015	ARYAN SAHU
16	U15CS047	DUPUGUNTLA BHANU SIVA KASINADH
17	U15CS048	GANDLUR REDDY GREESHMA
18	U15CS049	GANESH BAG
19	U15CS050	GANGARAJU RAHUL
20	U15CS051	GANGARAPU UKESH
21	U15CS052	GANGU BHAGYA
22	U15CS053	GLADSON J
23	U15CS054	GOLI SUDEEP KRISHNA
24	U15CS055	GOLLAPUDI KALYAN KUMAR
25	U15CS056	GORRE THIRUPATHI REDDY
26	U15CS057	GUJJETI MAHESH
27	U15CS058	GUNDA VINAY KUMAR
28	U15CS059	HANUMAN B
29	U15CS060	HARI HARAN M
30	U15CS061	HASTHI RUCHITHA
31	U15CS062	HEMA NARAYANAN R
32	U15CS063	INAPARTHI RAGHAVA
33	U15CS064	INJE RAVI TEJA

34	U15CS238	VATHADI SWAMYVENKATESH
35	U15CS239	AVINASH KUMAR
36	U15CS240	YUGESH S

COURSE COORDINATOR

HOD

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute Of Higher Education & Research
Declared as Deemed to be University U/S 3 Of UGC Act, 1.
Chennai - 600 073. INDIA

COURSE FEEDBACK FORM

Academic Year		2020-2021					
Term							
Course Number							
Course Title		Short term course on Fuzzy Sets And its Application					
Number of Credits							
Type of Course	Regular		Elective		Add-on	✓	

I. Information on the Respondent: (Tick (√) Appropriately)

1. **Percentage of classes attended**

0-20		20-40		40-60		60-80	✓	80-100	

2. **Number of hours per week spent on the course (Other than lecture hours)**

0-2		2-4		4-6		6-8		8-10	✓

3. **Preparation for the course by the student:**

(i)	Have done part of this course earlier	NO
(ii)	Has adequate prior exposure to the prerequisites	NO
(iii)	Had to pickup relevant additional topics through concurrent study	YES
(iv)	Have no exposure to the background material	YES

4. **The expectations for taking the course by the student are:**

(a)	Enhance by skill base in the area of specializations	YES
(b)	Get exposed to a relevant subject	NO
(c)	Curiosity	NO
(d)	Better Employment Opportunity	YES
(e)	Complete Course requirements	NO
(f)	To Improve CGPA	NO

About the Instructor: Information on the Respondent: (Tick (√) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture	✓				
2.	Comment of the Subject	✓				
3.	Clarity of expression	✓				
4.	Level of preparation		✓			
5.	Level of interaction		✓			
6.	Accessibility outside the class		✓			
7.	Others (please specify	✓				

A: Excellent	✓	B: Very Good		C: Good		D: Satisfactory		E: Poor	

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute of Higher Education & Research
(Declared as Deemed-to-be-University u/s 3 of UGC Act, 1956)
Chennai-600 073.(INDIA)

COURSE FEEDBACK FORM

Academic Year		2020-2021					
Term							
Course Number							
Course Title		Short term course on Fuzzy Sets And its Application					
Number of Credits							
Type of Course	Regular		Elective		Add-on	✓	

I. Information on the Respondent: (Tick (√) Appropriately)

1. **Percentage of classes attended**

0-20		20-40		40-60		60-80	✓	80-100	

2. **Number of hours per week spent on the course (Other than lecture hours)**

0-2		2-4		4-6		6-8		8-10	✓

3. **Preparation for the course by the student:**

(i)	Have done part of this course earlier	Yes
(ii)	Has adequate prior exposure to the prerequisites	NO
(iii)	Had to pickup relevant additional topics through concurrent study	NO
(iv)	Have no exposure to the background material	NO

4. **The expectations for taking the course by the student are:**

(a)	Enhance by skill base in the area of specializations	Yes
(b)	Get exposed to a relevant subject	Yes
(c)	Curiosity	NO
(d)	Better Employment Opportunity	Yes
(e)	Complete Course requirements	No
(f)	To Improve CGPA	NO

About the Instructor: Information on the Respondent: (Tick (√) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture	✓				
2.	Comment of the Subject	✓				
3.	Clarity of expression	✓				
4.	Level of preparation	✓	✓			
5.	Level of interaction		✓			
6.	Accessibility outside the class	✓				
7.	Others (please specify	✓				

A: Excellent	✓	B: Very Good		C: Good		D: Satisfactory		E: Poor	

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.,
Bharath Institute Of Higher Education & Research
(Declared as Deemed to be University U/S 3 Of UGC Act, 1956)
Chennai - 600 073. INDIA

COURSE FEEDBACK FORM

Academic Year		2020-2021					
Term							
Course Number							
Course Title		Short term course on Fuzzy Sets And its Application					
Number of Credits							
Type of Course	Regular		Elective		Add-on	✓	

I. Information on the Respondent: (Tick (√) Appropriately)

1. **Percentage of classes attended**

0-20		20-40		40-60		60-80		80-100	✓

2. **Number of hours per week spent on the course (Other than lecture hours)**

0-2		2-4		4-6		6-8	✓	8-10	

3. **Preparation for the course by the student:**

(i)	Have done part of this course earlier	Yes
(ii)	Has adequate prior exposure to the prerequisites	Yes
(iii)	Had to pickup relevant additional topics through concurrent study	Yes
(iv)	Have no exposure to the background material	NO

4. **The expectations for taking the course by the student are:**

(a)	Enhance by skill base in the area of specializations	Yes
(b)	Get exposed to a relevant subject	Yes
(c)	Curiosity	No
(d)	Better Employment Opportunity	No
(e)	Complete Course requirements	No
(f)	To Improve CGPA	No

About the Instructor: Information on the Respondent: (Tick (√) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture		✓			
2.	Comment of the Subject		✓			
3.	Clarity of expression	✓				
4.	Level of preparation	✓				
5.	Level of interaction	✓				
6.	Accessibility outside the class	✓				
7.	Others (please specify	✓				

A: Excellent	✓	B: Very Good		C: Good		D: Satisfactory		E: Poor	

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT
Department Of Computer Science & Engg.
Bharath Institute Of Higher Education & Research
(Declared as Deemed to be University U/S 3 of UGC Act, 1956)
Chennai-600 073.

Bharath UNIVERSITY

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

34 YEARS OF EXCELLENCE

CERTIFICATE OF PARTICIPATION

Mr. ARYAN SAHU

For actively participating in the value added course **"Short term course on Fuzzy Sets And its Applications "**Conducted by School of Computing, BIHER from 11-08-2020 to 18.08.2020 .

Course Coordinator

Head of the Department

Director