KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

MINUTES OF THE MEETING OF THIRD BOARD OF STUDIES MEETING HELD ON 15-11-2021 AT 02:30 PM IN ONLINE TOWARDS CONSIDERING THE PROPOSED R2020 UG PROGRAMME, B. Tech. (ARTIFICIAL INTELLIGENCE AND DATA SCIENCE) CURRICULUM & SYLLABI (V SEMESTER AND VI SEMESTER), PG PROGRAMME M.Sc. (DATA ANALYTICS) CURRICULUM STRUCTURE, COMMON FIRST YEAR CURRICULUM R2021

Platform: Microsoft Teams

Meeting Recording Link:

https://kcetvnrorg-my.sharepoint.com/:v:/g/personal/ramyacse_kamarajengg_edu_in1/EQVujD8zZUhOr6fsUvawhpEBRe32NwiaQmK5srmhEqBagg?e=VANeL2

Dr. A. Meenakshi, HoD (Department of Computer Science and Engineering) welcomed all the members of the Board of Studies, Special Invitee and Faculty members of CSE department to the 3rd BOS meeting. The following members were present:

S. No.	Name of the Expert	Designation	Capacity
1.	Dr.R.B.V.Subramaanyan,	Professor and Head, Department of Computer Science and Engineering National Institute of Technology, Warangal E-mail ID: rbvs66@nitw.ac.in Phone No: 9491346969	Academic Council Nominee
2.	Dr.Sabu M.Thambi	Professor, Indian Institute of Information Technology, Management-Kerala, Trivandram. E-mail ID: sabu.thampi@iiitmk.ac.in Phone No: 9447103005	Academic Council Nominee

3.	Mr.G.S.Raman,	Director, Training Division, Sri Moogambikai Infotech Solutions, Madurai raman.g@mookambikainfo.com ramansriranga@gmail.com Phone No: 8870324388	Industrialist Nominee
4.	Dr.R.Venkatesan,	Assistant Professor, CSE, Karunya University, Coimbatore rlvenkei2000@karunya.edu Phone No: 98948 80563	Alumni Nominee
5.	Er. Nanu Swamy	Founder of Sentinel Technologies, The Maxelerator Foundation, Robotech Center, Madurai nanunh@gmail.com	Special Invitee

Internal Members of BoS – Faculty members of CSE and AI & DS		
S. No.	**Name**	**Designation**
1.	Dr.A.Meenakshi	Associate Professor and Head
2.	Dr.M.IndraDevi	Professor PG (M.E - CSE) Programme Co-ordinator
3.	Dr.R.Muthuselvi	Professor NBA Coordinator
4.	Dr.R.Ramya	Assistant Professor / CSE UG (B. E. CSE) Programme Co-ordinator
5.	Dr.A.Anandh	Associate Professor / CSE UG (B. Tech. AI &DS) Programme Co-ordinator
6.	Dr.G.Nirmala	Assistant Professor / CSE
7.	Mr.G.Srinivasan	Assistant Professor / CSE
8.	Mrs.S.Athilakshmi	Assistant Professor / CSE
9.	Mr.B.Muthukrishnavinayagam	Assistant Professor / CSE
10.	Mrs.K.Muthulakshmi	Assistant Professor / CSE
11.	Mrs.K.Leelarani	Assistant Professor / CSE
12.	Mr.M.Rajasekaran	Assistant Professor / CSE
13.	Ms.G.Vijayalalitha	Assistant Professor / CSE
14.	Mrs.J.Lavanya	Assistant Professor / CSE

15.	Dr.P.Praveen Kumar	Assistant Professor / AI & DS
16.	Mrs.P.Antony Seba	Assistant Professor / AI & DS
17.	Ms.T.Rajashree	Assistant Professor / AI & DS
18.	Ms.S.Shopika	Assistant Professor / AI & DS
19.	Mrs.K.Indumathi	Assistant Professor / AI & DS

After brief introduction by Dr.A.Meenakshi, HoD (Department of Computer Science and Engineering) about the participants from industry, alumni, faculty from the Department of Computer Science and Engineering, the agenda items were taken up for discussion. The discussion starts with R2020 UG Programme curriculum and syllabi of 5th and 6th semester of B. Tech. (Artificial Intelligence and Data Science) and then continues with the suggestions and recommendations received from all BOS members.

Discussions:

BOS 003.01

HoD / CSE gave a brief presentation for the Approval of the Minutes of the Second BoS and pointed out the Actions Taken for the Previous BoS.

BOS 003.02

HOD/CSE presented the R2020 UG Curriculum, B. Tech. (Artificial Intelligence and Data Science) for the following.

a. B. Tech. (AI & DS) (5th and 6th semester)

Semester V

S. No	Course Code	Course Name	Category	Credits			
				L	T	P	C
THEORY							
1	AD1502	Java Programming	PCC	2	0	2	3
2	AD1503	Networks and Security	PCC	3	0	0	3
3	AD1501	Big Data Analytics	PCC	3	0	0	3
4	PE1	Professional Elective – I	PEC	3	0	0	3

5	PE2	Professional Elective - II	PEC	3	0	0	**3**
6	OE1	Open Elective – I	OEC	3	0	0	**3**
PRACTICALS							
7	AD1511	Big Data Analytics Laboratory	PCC	0	0	4	2
8	AD1512	Networks and Security Laboratory	PCC	0	0	4	2
		TOTAL		**17**	**0**	**10**	**22**

Semester VI

S. No	Course Code	Course Name	Category	Credits			
				L	T	P	C
THEORY							
1	AD1601	Computer Vision	PCC	3	0	0	3
2	AD1602	Deep Learning	PCC	3	0	0	3
3	GE 1671	Total Quality Management	PCC	3	0	0	3
4	OL1	Online Course – I	OC	0	2	0	**2**
5	PE3	Professional Elective - III	PEC	3	0	0	**3**
6	PE4	Professional Elective - IV	PEC	3	0	0	**3**
7	AUD2	Audit Course – II	AUD	3	0	0	**0**
PRACTICALS							
7	CS1681	Mobile Application Development Laboratory	PCC	1	0	4	3
8	AD1611	Deep Learning and Computer Vision Laboratory	PCC	0	0	6	3
9	HS1521	Professional Communication	EEC	0	0	2	**1**
		TOTAL		**19**	**2**	**12**	**24**

b. List of Professional Elective Courses

Professional Elective Courses (Elective – I) – Semester V

Sl. No.	Course Code	Course Name	Credits				
			L	T	P	Contact Periods	C
1.	CS1531	Computer Graphics	3	0	0	3	3
2.	AD1531	Information Retrieval	3	0	0	3	3
3.	AD1532	Modern Application Development	2	0	2	4	3
4.	AD1533	Soft Computing	3	0	0	3	3
5.	CS1402	Software Engineering with UML Design	3	0	0	3	3

Professional Elective Courses (Elective – II) – Semester V

Sl. No.	Course Code	Course Name	Credits				
			L	T	P	Contact Periods	C
6.	CS1537	C# and .Net Fundamentals	2	0	2	4	3
7.	CS1538	Data Science using R	2	0	2	4	3
8.	CS1532	Data Warehousing and Data Mining	3	0	0	3	3
9.	AD1534	Ethical Hacking	3	0	0	3	3
10.	AD1535	Human Computer Interaction	3	0	0	3	3

Professional Elective Courses (Elective – III) – Semester VI

Sl. No.	Course Code	Course Name	Credits				
			L	T	P	Contact Periods	C
11.	IT1631	Blockchain Technologies	3	0	0	3	3
12.	AD1631	Cognitive Science	3	0	0	3	3
13.	EC1633	Digital Image Processing	3	0	0	3	3
14.	AD1632	MATLAB Programming for Numerical Computations	2	0	2	4	3
15.	CS1535	Software Testing and Quality Assurance	3	0	0	3	3

Professional Elective Courses (Elective – IV) – Semester VI

Sl. No.	Course Code	Course Name	Credits				
			L	T	P	Contact Periods	C
16.	CS1536	Agile Development	3	0	0	3	3
17.	CS1635	Full Stack Development	2	0	2	4	3
18.	CS1540	Multimedia Systems	3	0	0	3	3
19.	AD1633	Robotics and Intelligent Systems	3	0	0	3	3
20.	CS1637	Social Media Analytics	3	0	0	3	3

c. List of Open Electives

Open Elective I (Semester V) - Offered to other departments

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	OAD1551	Foundations of Data Science using Excel	3	0	0	3

d. List of Audit Courses

Audit Courses (Offered to all departments)

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	AUD101	Constitution of India	3	0	0	0
2.	AUD102	Value Education	3	0	0	0
3.	AUD103	Pedagogy Studies	3	0	0	0
4.	AUD104	Stress Management by Yoga	3	0	0	0
5.	AUD105	Personality Development and Soft Skills	3	0	0	0
6.	AUD106	Essence of Indian Knowledge Tradition	3	0	0	0
7.	AUD107	Sanga Tamil Literature Appreciation	3	0	0	0
8.	AUD108	Design Thinking	3	0	0	0

BOS 003.03

- **HOD/CSE presented First year common curriculum for all Departments which will be followed from the current academic year 2021-2022. It will come under new Regulations 2021.**

First Year Curriculum

As per the recommendations and suggestions received from the committee, the revised curriculum is listed as below:

SEMESTER I

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	SH101	Technical English	3	0	0	3
2	MA101	Matrices and Differential Calculus	3	1	0	4
3	PH101	Engineering Physics	3	0	0	3
4	GE101	Principles of Engineering	3	0	0	3
5	EM101	Coding Techniques - I	3	0	0	3
6	GE102	Biology for Engineers	3	0	0	3
Practicals						
7	MA102	Mathematics Laboratory (using MATLAB)	0	0	3	1
8	PH102	Physics Laboratory	0	0	3	1
9	EM102	Coding Techniques - I Laboratory	0	0	3	1
Total Credits			**18**	**1**	**9**	**22**

SEMESTER II

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	SH151	Technical Communication Skill Development	3	0	2	4
2	MA151	Vector Calculus and Laplace Transforms	3	0	0	3
3	CY151	Engineering Chemistry	3	0	0	3
4	GE151	Design Thinking	3	0	0	3
5	EM151	Coding Techniques - II	3	0	0	3
6	GE152	Engineering Graphics	3	0	2	4
Practicals						
7	GE153	MATLAB & LabVIEW Simulation Laboratory	0	0	4	2
8	CY152	Chemistry Laboratory	0	0	3	1
9	EM152	Coding Techniques – II Laboratory	0	0	3	1
Total Credits			**18**	**0**	**14**	**24**

BOS 003.04

Mrs.Antony Seba presented and discussed about the proposal of starting the new PG program M.Sc (Data Analytics) and also about the credit distribution , curriculum structure of M.Sc. (Data Analytics) from 1st semester to 4th semester including Professional Elective Courses.

The credit requirement for the programme M.Sc. Data Science (as per Regulations 2021) is outlined below:

S. No.	Category of Courses	Credits
1.	**Professional Core Courses**	48
2.	**Professional Elective Courses**	18
3.	**Practical courses**	16
4.	**Project**	8

SEMESTER I

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	MA202	Multivariate Calculus and Linear Algebra	3	0	0	3
2	DA101	Data Structures and Algorithms	3	0	0	3
3	DA102	Statistical Foundations for Data Science	3	0	2	4
4	DA103	Principles of programming Languages	3	0	0	3
5	DA104	Modern Database Systems	3	0	0	3
Practicals						
6	DA105	Data Structures and Algorithms Laboratory	0	0	4	2
7	DA106	Modern Database Systems Laboratory	0	0	4	2
8	DA107	Computational Statistics Laboratory	0	0	2	1
		Total Credits	15	0	12	21

SEMESTER II

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	DA151	Data Engineering	3	1	0	4
2	DA152	Foundations of Machine Learning	3	1	0	4
3	DA153	Big Data Analytics	3	0	0	3
4	DA154	Cloud Computing and Virtualization Fundamentals	3	0	0	3
5	DA9XX	Elective I	3	0	0	3
6	DA9XX	Elective II	3	0	0	3
Practicals						
7	DA155	Data Science Laboratory	0	0	4	2
8	DA156	Cloud Computing Laboratory	0	0	4	2
9	DA157	Big Data Analytics Laboratory	0	0	4	2
		Total Credits	18	2	12	26

SEMESTER III

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	DA201	Foundations of Deep Learning	3	0	0	3
2	DA202	Full stack Application framework for machine Learning	3	0	2	4
3	DA203	Natural Language Processing	3	0	0	3

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
4	DA204	Applied Predictive Analytics	3	1	0	4
5	DA9XX	Elective III	3	0	0	3
6	DA9XX	Elective IV	3	0	0	3
Practicals						
6	DA205	Natural Language Processing Laboratory	0	0	4	2
7	DA206	Predictive Analytics Laboratory	0	0	2	1
8	DA207	Deep Learning Laboratory	0	0	4	2
		Total Credits	18	1	12	25

SEMESTER IV

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	DA251	Forecasting Methods and Applications	3	1	0	4
2	DA9XX	Elective - V	3	0	0	3
3	DA9XX	Elective - VI	3	0	0	3
Practicals						
4	DA252	Project	0	0	16	8
		Total Credits	9	1	16	18

The number of credits (totaling to 90) in each semester is summarized as follows:

Course	I	II	III	IV
M.Sc. Data Science	21	26	25	18

Professional Elective Courses (Odd Semester)

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	DA901	Optimization Techniques	3	0	0	3
2	DA902	Augmented Reality and Virtual Reality	2	0	2	3
3	DA903	Data Modeling and Programming	2	0	2	3
4	DA904	Information Retrieval and Web Search	3	0	0	3
5	DA905	Neural Networks	3	0	0	3
6	DA906	Data Visualization	3	0	0	3
7	DA907	Statistical Modeling and Tools	2	0	2	3
8	DA908	Web Data Mining	2	0	2	3
9	DA909	Fundamentals of Artificial Intelligence	3	0	0	3
10	DA910	Scripting Paradigms	2	0	2	3
11	DA911	Web Technology	2	0	2	3
12	DA912	Knowledge Engineering	3	0	0	3
13	DA913	Functional Programming Methods for Analytics	2	0	2	3
14	DA914	Serverless Computing	3	0	0	3
15	DA915	Smart Analytics	3	0	0	3
16	DA916	Affective Computing	3	0	0	3
17	DA917	Business Intelligence and Analytics	3	0	0	3
18	DA918	Discrete Event Simulation	3	0	0	3
19	DA919	Data Communication and Exploration	3	0	0	3
20	DA920	Predictive Modelling	3	0	0	3

Professional Elective Courses (Even Semester)

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	DA951	Information Security and Management	3	0	0	3

S. No.	Course Code	Course Name	Credits			
			L	T	P	C
2	DA952	Robotics and Intelligent Systems	3	0	0	3
3	DA953	Bio Informatics	3	0	0	3
4	DA954	Marketing and Media Analytics	3	0	0	3
5	DA955	Soft Computing	3	0	0	3
6	DA956	Mobile Application Development	2	0	2	3
7	DA957	Text Analytics	2	0	2	3
8	DA958	Experimental Design and Analysis	2	0	2	3
9	DA959	Computational Thinking	3	0	0	3
10	DA960	Social Network Analysis	3	0	0	3
11	DA961	Human Computer Interaction	3	0	0	3
12	DA962	Advanced Statistical techniques in Data Science	3	0	0	3
13	DA963	Advanced Deep Learning and Computer Vision	3	0	0	3
14	DA964	Decision Support Systems	3	0	0	3
15	DA965	Reinforcement Learning	3	0	0	3
16	DA966	Recommender Systems	3	0	0	3
17	DA967	Digital Image Processing	3	0	0	3
18	DA968	Genetic Engineering	3	0	0	3
19	DA969	Artificial Intelligence Applications in Healthcare	3	0	0	3
20	DA970	Sentiment Analysis	3	0	0	3

S. No.	Category of Courses	Credits	I	II	III	IV
1.	Professional Core Courses	48	16	14	14	4
2.	Professional Elective Courses	18	0	6	6	6
3.	Practical courses	16	5	6	5	-
4.	Project	8	-	-	-	8

DISCUSSIONS

- Dr. R. B. V. Subramaanyan suggested to have L-0 T-1 P-4 C-3 for Mobile Application Development Laboratory.
- Dr. R. B. V. Subramaanyan suggested to include Mining Massive Datasets paper for the course M.Sc. (Data Analytics).
- Dr. R. B. V. Subramaanyan suggested to include some more Advanced Networks related papers in elective courses.
- Dr. Sabu M. Thampi suggested to include mini projects in II and III Semester and internship in II Semester for M.Sc. (Data Analytics).
- Dr. Sabu M. Thampi suggested to offer minimum number of electives based on the specialization.
- Dr. Sabu M. Thampi suggested that Data Visualization paper may also be offered in I Semester along with python.

RESOLVED TO APPROVE the curriculum and detailed syllabi for V and VI Semester of B. Tech. (AI & DS).

RESOLVED TO APPROVE the proposed common curriculum of I year and the Proposal of New Course M.Sc. (Data Analytics).

The meeting ended with the Vote of Thanks by Dr. A. Anandh, Associate Professor, Department of CSE, Kamaraj College of Engineering and Technology, Virudhunagar.

19/11/2021

(Dr. A. Meenakshi)
BoS Chairman – CSE
HOD / CSE

19/11/2021

UG - Programme Co-ordinator