CENTRAL UNIVERSITY OF KERALA
केरल केन्द्रीय विश्वविद्यालय
DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES

**Minutes of BOS in Computer Science
held on 09/07/2020 at 11.30 AM**

[Department seal: कंप्यूटर विज्ञान विभाग / केरल केंद्रीय विश्वविद्यालय / CENTRAL UNIVERSITY OF KERALA / कासरगोड / KASARAGOD / पेरिया / Periye - 671316 / Department of Computer Science]

Agenda:
(i) To move the course Data Mining from 3rd to the 2nd semester in the place of ADBMS
(ii) To introduce a course Big Data Analytics in the 3rd semester in the place of Data Mining
(iii) To move the elective from 4th semester to the second semester
(iv) any other discussion

The following members were present during the meeting.
1. Dr. Rajesh R, Head, Department of Computer Science
2. Dr. K.A. Germina, Associate Professor, Department of Mathematics
3. Mr. Kumar V, Assistant Professor, Dept. of Computer Science
4. Prof. (Dr.) Vineeth Paleri, Professor, Dept. of Computer Science, NITC, Calicut
5. Prof. (Dr.) Arunkumar T., Professor, School of Computer Science and Engineering, VIT, Vellore
6. Prof. (Dr.) Manjaiah D.H., Professor, Dept. of Computer Science Application, Mangalore University
7. Mr. Ragesh N.K., DSP & Multimedia Specialist, Tata Elxsi Ltd.
8. Mr. Sagar Padmanabhan, TechLead, Infosys

The BOS meeting started with a welcome address by Dr. Rajesh R.

The BOS members have gone through the previous course structure and the current course structure of M.Sc Computer Science.

There was a very good discussion regarding the entry criteria (eligibility) by Prof. (Dr.) Manjaiah D.H, whether industry or research oriented syllabus Prof. (Dr.) Vineeth Paleri, availability of bridge on course for other discipline students by Prof. (Dr.) Manjaiah D.H., industry relevance by Prof. (Dr.) Arunkumar T., Mr. Ragesh N.K. and Mr. Sagar Padmanabhan.

The BOS chairman conveyed that the syllabus is research oriented with main focus on intelligent systems and the same was supported by Prof. (Dr.) Vineeth Paleri. The BOS chairman conveyed the availability of bridge course and audited course as part of the course curriculum and the same was supported by Prof. (Dr.) Manjaiah D.H. The BOS chairman clarified the non-necessity of DBMS as the students are learning it during the UG course and the same was supported by Prof. (Dr.) Arunkumar T. The need of industry linkage was specified by Mr. Ragesh N.K. and Mr. Sagar Padmanabhan were also considered positively for further improvement of the curriculum.

The following were approved in the BOS
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The meeting ended with vote of thanks.

Dr. Rajesh R.   Dr. K.A.Germina   Mr. Kumar V   Prof. (Dr.) Vineeth Paleri

अध्यक्ष / Head
कंप्यूटर विज्ञान विभाग
Department of Computer Science
भौतिक विज्ञान विद्यालय School
School of Physical Sciences

Prof. (Dr.) Arunkumar T.   Prof. (Dr.) Manjaiah D.H.   Mr. Ragesh N.K.   Mr. Sagar Padmanabhan

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Tejaswini Hills, Central University of Kerala, Periye PO, Kasaragod - 671320

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CENTRAL UNIVERSITY OF KERALA DEPARTMENT OF COMPUTER SCIENCE M.Sc. COMPUTER SCIENCE – PROGRAMME STRUCTURE					
COURSE CODE	**COURSE TITLE**	**CONTACT HRS/WEEK**			**CREDITS**
		LEC	**LAB**	**TUT**	
SEMESTER III					
CSC5301	Big Data Analytics	2	2	1	4

This is an experimental, problem solving, **skill development and employability based course.**

Course Objective

The objective of the course is to provide theoretical and practical aspects of big data analytics.

By completing this course, students will obtain the following course outcomes:
1. Knowledge gained:
    (i) State-of-art Big Data Analytics techniques and algorithms
2. Skill gained:
    (ii) Critically Analyze and perform big data analysis using Hadoop and MapReduce technologies
    (iii) Ability to identify the characteristics of data sets and compare the trivial and big data for various applications.
    (iv) Ability to solve problems associated with batch learning and online learning
    (v) Effectually handling big data characteristics such as high dimensionality, dynamically growing data and scalability issues
3. Competency gained:
    (vi) Implement real world big data applications

Prerequisites: Basic knowledge in data mining.

Grading:

Lab experiments and implementation	– 15%
Mini project (individual)	– 10%
Class Test	- 10%
Assignment/Quiz/presentation	– 5%
Final Exam	– 60%

CSC5301 – Big Data Analytics

Module 1
Introduction to Big Data, challenges of conventional systems, characteristics of Big Data-Volume, Variety, Velocity, Veracity, etc., Big Data analytics, Big Data applications. Introduction to enabling technologies for Big Data, introduction to Big Data stack, introduction to some Big Data distribution packages

Module 2
Introduction to Big Data platforms, overview of Apache Spark, YARN, Hadoop. Hadoop distributed file system, components of Hadoop, Hadoop architecture, analysing the data with Hadoop, introduction to MapReduce, MapReduce programming model, MapReduce examples.

Module 3
Introduction to Big Data storage platforms for large scale data storage, introduction to Big Data streaming platforms for fast data. Introduction to Big Data applications (Machine Learning), overview of Big Data Machine Learning, Mahout introduction, Big Data Machine Learning algorithms in Mahout- kmeans, Naïve Bayes etc.

Module 4
Predictive Analytics-Simple linear regression, multiple linear regression, interpretation of regression coefficients. Visualizations - Visual data analysis techniques, interaction techniques-systems and applications.

References:
1. Dirk Deroos et al., Hadoop for Dummies, Dreamtech Press, 2014, ISBN: 978-1-118-60755-8(pbk), 978-1-118-65220-6(ebk), 978-1-118-70503-2(ebk).
2. Chuck Lam, Hadoop in Action, December, 2010, Manning Publications, ISBN: 9781935182191
3. Jiawei Han, Micheline Kamber "Data Mining Concepts and Techniques", 2nd Edition, Elsevier, Reprinted 2008, ISBN 978-0-12-381479-1.
4. J. Leskovec, A. Rajaraman, J.D. Ullman, Mining of Massive Datasets, Cambridge University Press, ISBN: 978-1-107-07723-2., 9781108476348, 2020
5. Arshdeep Bahga, Vijay Madisetti, "Big Data Science & Analytics: A Hands On Approach", VPT, 2016, ISBN: 978-0996025539