Vivekanand Education Society's College of
Arts, Science & Commerce(Autonomous)

Department of Computer Science
Minutes of the 3rd BOS Meeting

The third meeting of BOS of the Computer Science Department was held on 18th Feb 2023 between 11 am to 1 pm. The following members were present for the meeting -

1. Chairperson (HOD / Coordinator) : Mr. Kamlakar Bhopatkar
2. University Nominee:
   Dr. Rasika Mallya, Associate Director, DESs NMITD, Mumbai
3. External Subject Expert Member:
   a. Dr. Rakhi Gupta, Coordinator, IT Department, KC College,
   HSNC University, Mumbai
   b. Dr. Sumedha Sirsikar, Associate Professor, School of Computer Engineering and Technology, Dr. Vishwanath Karad MIT WPU, Pune
4. The entire faculty of each specialization:
   i. Dr. Madhavi Vaidya
   ii. Mr. Sujit Chavan
   iii. Ms. Laxmi Tiwari
   iv. Ms. Neha Narne
   v. Ms. Rajashree Date
5. Special Invitee - Mr. Gokul Choudhary, a member of Data Science & Data Analytics Department attended the meeting.

Mr. Ranjeet Salunkhe and Ms. Rameswari Selveraj couldn't attend the meeting due to some other commitments.

The meeting was planned with the following agenda -

1. To discuss and sanction the syllabi for the academic year 2023-24
2. Implementation of NEP for 2023-24
3. AOB with permission of chair

The proceedings of the meeting along with the resolutions adopted are as follows -

Agenda 1 - To discuss and sanction the syllabi for the academic year 2023-24

Mr. Kamlakar Bhopatkar welcomed and gave a brief introduction about which syllabi would be presented. Two syllabi were presented - (i) SYBSc Computer Science & (ii) TYBSc Computer Science.

Although SYBSc Computer Science syllabus was made in 2023-24, minor corrections were made as follows -
(i) Creative Content Writing - where some contents were rearranged, some new topics related to different forms of contents relevant to college students were added, and some parts which are obsolete got removed.
Dr. Sumedha Sirsikar suggested the idea of plagiarism in Unit 1 where the content writing process has been covered.

(ii) Theory of Computation - This paper had a practical component. It has been replaced by a Tutorial component spanning multiple topics spread across the syllabus.

It was followed by a presentation of the TYBSc Computer Science Syllabus. The details of which are as follows -

Semester	Subject	Presented By	Main points in the syllabus	Comments by BOS Members
V	Linux Server Administration, Architecting of IoT, Information and Network Security, Web Services	-	Same as present under Univ. of Mumbai Syllabus	
V	Data Science	Mr. Kamlakar	Unit 1 - Covers basics of data	

			science & preprocessing on data using various libraries Unit 2 - Various types of data analysis - including hypothesis testing, anova, machine learning techniques, Unit 3 - Model Evaluation, Data Visualization and Introduction to Data Management In practicals, some basic practicals of excel have been included along with other practicals	
V	Introduction to Business Intelligence, Data Warehousing and Data Mining	Dr. Madhavi Vaidya	**Unit 1 -** Data-Information-Knowledge-Decision making-Action cycle. Business Intelligence; Data warehousing, Business Intelligence architecture, Use and benefits of Business Intelligence. Knowledge Discovery in Databases: KDD process model, Data Pre-processing: Cleaning: Missing Values; Noisy Values; Inconsistent values; redundant values. Outliers,	Case studies on pig hive impala or such a case study can be included

			Integration, transformation, reduction, Discretization: Equal Width Binning; Equal Depth, Binning, Normalization, Smoothing **Unit 2**-Introduction to data warehousing and concepts, definitions, and applications, Definition of Data warehouse, Logical architecture of Data Warehouse, Data Warehouse model-Enterprise warehouse; Data Marts; Virtual warehouse. Data warehousing tools and technologies: ETL (Extract, Transform, Load) tools. Data warehousing platforms. **Unit 3**-Data pre-processing: Principles of dimensional modeling, Data cubes, Data cube operations, data cube schemas. Data cleaning, data integration, data	

			transformation, and data reduction. Designing Business Data Warehouse:Data mining techniques: association rule mining, clustering, classification, and prediction, Big data analytics tools, Importance of data governance, security, and privacy in data warehousing and data mining with big data.	
V	Game Programming	Ms. Rajashree Date	DirectX has been removed New Topics added in unit 2 and 3 **Unit 2** -Particles: Particle System components and modules Emission, Shape, Velocity over Lifetime, and Force Over Lifetime modules, Particle Collisions and Triggers, Creating custom particle shaders and textures, Importing and using particle assets from the Unity Asset Store	

			Animation: 3D Rigging, Morphing, Skeletal animation, Timeline, Multiplayer and Networking, UI, Navigation and Pathfinding, XR, Publishing. **Unit 3**-Sound Design: Audio Mixer and Audio Sources components, Sound spatialization and 3D sound positioning, Sound effects and audio clips import and organization, Using audio events to trigger sounds in the game.	
VI	Wireless Sensor Networks and Mobile Communication, Digital Image Processing	-	Same as present under Univ. of Mumbai Syllabus	
VI	Cloud Computing	Ms. Laxmi Tiwari	**Unit 1:**Introduction to Cloud Computing,Types of cloud Services of cloud,Cloud Computing Architecture	

			Unit 2:Virtualization and Types of Virtualization ,open challenges in cloud computing Cloud Platforms and Cloud Applications Microsoft Cloud Services: Azure core concepts, SQL Azure, Windows Azure Platform Appliance,Amazon Web Services (AWS): Amazon Web Services and Components, Amazon Simple DB, Elastic Cloud Computing (EC2), Amazon Storage System, Amazon Database services (Dynamo DB). **Unit 3:**Introduction to Openstack and components of openstack,Tenant,Quota,Block Storage Deployment,Application orchestration using Openstack Heat	
VI	Blockchain	Ms. Rajashree Date	This subject has been introduced in place of Cyber Forensics.	Dr. Sumedha Sirsikar requested to completely change the syllabus along with the practicals.

VI	Information Retrieval	Dr. Madhavi Vaidya	Experiments to be added on social networking data analysis, web mining and a few more tools introduction	
VI	Artificial Intelligence	Mr. Kamlakar Bhopatkar	Unit 1 - What is AI and searching techniques, Unit 2- Knowledge representation, Machine learning techniques Unit 3 - More machine learning techniques Practical also will cover some demo practical on TensorFlow/Open AI	Dr. Rasika Malya suggested the topic of Fuzzification and Defuzzification under knowledge representation.
VI	Ethical Hacking	Ms. Neha Narne	Most of the syllabus was same as previous year. Some recent case studies were added like Spring4Shell	

Agenda 2 - Implementation of NEP for 2023-24

Mr. Kamlakar presented a proposed syllabi of FY, SY & TYBSc Computer Science would be converted into NEP. Some topics would be shifted to major/add-on/ability enhancement etc. Topics like “Indian Constitution” would also be included in the syllabus.

Distribution	Sem1	Subjects	Theory (Credits)	Pract (Credits)	Lectures (in Hrs)	Practicals (in Hrs)
Major	6	Digital Systems & Architecture	2	1	2	2
		Programming using Python	2	1	2	2
Minor	4	Discrete Structures	3	1	3	2
Multidisciplinary	3	Open Source Technologies	2	1	2	2
Ability	2	Indian Constitution	2	0	2	0
Skill/internship	3	Web Technologies	2	1	2	2
value added	3	Excel / Aptitude	2	1	2	2
Total	21				15	12

Distribution	Sem2	Subjects	Theory (Credits)	Pract (Credits)	Lectures (in Hrs)	Practicals (in Hrs)
Major	6	Algorithms	2	1	2	2
		DBMS	2	1	2	2
Minor	4	Descriptive Statistics	3	1	3	2
Multidisciplinary	3	Digital Marketing	2	1	2	2
Ability	2	Soft Skills	2	0	2	0
Skill/internship	3	Application Development using Python	2	1	2	2
value added	3	Introduction to Julia / Unity Game Programming	2	1	2	2
Total	21				15	12

Distribution	Sem3	Subjects	Theory (Credits)	Pract (Credits)	Lectures (in Hrs)	Practicals (in Hrs)
Major		Principles of Operating Systems	3	1	3	2
		Advanced Database Concepts	3	1	3	2
		Data Structures	3	1	3	2
Minor		Linear Algebra	3	1	3	2
Ability		Creative Content Writing / Green Technologies	2		2	
Skill/internship		Java Based Appl Devpt / Web Tech	3	1	3	2
Total	22		17	5	17	10

Distribution	Sem4	Subjects	Theory (Credits)	Tut / Pract (Credits)	Lectures (in Hrs)	Tut / Practicals (in Hrs)
Major		Theory of Computation	3	1	3	1
		Computer Networks	3	1	3	2
		Software Engineering	3	1	3	2
Minor		IoT Technologies	3	1	3	2
Ability		Research Methodology / Management Entrepreneurship	2		2	
Skill/internship		Advanced App Devpt / Android App Dvpt	3	1	3	2
Total	22		17	5	17	9

Distribution	Sem5	Subjects	Theory (Credits)	Pract (Credits)	Lectures (in Hrs)	Practicals (in Hrs)
Major		Data Sci / Linux / BI	6	2	6	4
		IoT / Web Serv / INS	6	2	6	4
Minor		Game Prog	3	1	3	2
Skill/internship		Project		2		2
Total	22		15	7	15	12

Distribution	Sem6	Subjects	Theory (Credits)	Pract (Credits)	Lectures (in Hrs)	Practicals (in Hrs)
Major		WNS / Blockchain/ CC	6	2	6	4
		IR/DIP/AI	6	2	6	4
Minor		Ethical Hacking	3	1	3	2
Skill/internship		Project		2		2
Total	22		15	7	15	12

Distribution	Sem7	Subjects	Theory (Credits)	Pract (Credits)	Lectures (in Hrs)	Practicals (in Hrs)
Major	16	Sub1	3	1	3	2
		Sub2	3	1	3	2
		Sub3	3	1	3	2
		Sub4	3	1	3	2
Minor	4	Sub5	3	1	3	2
Multidisciplinary	0					
Ability	0					

Skill/internship	2	Project	1	1	1	2
value added	0					
summer intern	0					
Research Pro / Dessertation	0					
Total	22				16	12
Distribution	**Sem8**	**Subjects**	**Theory (Credits)**	**Pract (Credits)**	**Lectures (in Hrs)**	**Practicals (in Hrs)**
Major	16	Sub1	3	1	3	2
		Sub2	3	1	3	2
		Sub3	3	1	3	2
		Sub4	3	1	3	2
Minor	4	Sub5	3	1	3	2
Multidisciplinary	0					
Ability	0					
Skill/internship	2	Project	1	1	1	2
value added	0					
summer intern	0					
Research Pro / Dessertation	0					
Total	22				16	12

*Subjects of semester 7 and semester 8 can be decided considering the trends and importance of subjects/technologies that time.

However finalization of this proposed structure and subjects would need necessary approvals of the college committees and NEP Guidelines which would be done in the due course of time. In case of changes, they would be conveyed to the members of the BOS.

The meeting ended with a vote of thanks by the chairman.