Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Minutes of the Board of Studies meeting
Faculty of Computer Science and Engineering & Information Technology

Date: 22/04/2024

Time: 9:30 AM

Reference Number: SVCE/CS & IT//BOS MIN/2023-24/18

Regulations: R22

The Eighteenth Board of Studies for the Faculty of Computer Science and Engineering and Faculty of Information Technology was held on 22.04.2024 at 9:30am in Hybrid mode. The lists of external members present for the meeting is given below:

S. No.	Name of the External Expert Members	Designation & Details
1.	Dr. V. Masilamani *Expert Member*	Associate Professor, Department of Computer Science Indian Institute of Information Technology Design & Manufacturing, Kancheepuram, Chennai - 600 127 Mobile : 9840260783 masila@iiitdm.ac.in
2.	Prof. H. Khanna Nehemiah *Expert Member*	Professor Ramanujan Computing Centre, Anna University Chennai, Tamil Nadu, - 600025 044-22358013 nehemiah@annauniv.edu
3.	Dr. S. Umamaheswari University Nominee	Associate Professor Department of Information Technology MIT Campus, Anna University, Chennai, Chennai-Tamil Nadu-600 044 9444493377 uma_sai@mitindia.edu dr.umasundar@cs.annauniv.edu
4.	Dr. A. Arivoli *Distinguished PG Alumnus*	Assistant Professor (Senior) Department of Computational Intelligence School of Computer Science and Engineering VIT University, Vellore – 632014 Mobile :9486704045 arivoli.a@vit.ac.in
5.	Mr. N. Hari Kumar Industry Expert	Senior Researcher Ericsson Research Lab Pvt Ltd. 8th Floor, Block C, SP Info City 40, MGR Salai, Kandanchavadi, Perungudi, Chennai 600096 Mobile:9790998573 n.hari.kumar@ericsson.com

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

6	Mr. Srinivasan Thanukrishnan *Industry expert -* *Special Invitee- AI & DS*	Founder & CEO Glosys Technology Solutions Pvt. Ltd. No. 6/2, Ethiraj Street, Padmanabha Nagar, Choolaimedu, Chennai – 600 094 Mobile : 7305607686 / tsrini1969@gmail.com

Dr. R Anitha, Chairman – BoS & HoD/CSE welcomed all the Board of Studies members and other faculty members for the meeting. Dr. Anitha welcomed the new member, **Prof. H. Khanna Nehemiah,** Professor Ramanujan Computing Centre, Anna University, Chennai-25. Dr. R Anitha, outlined the agenda of the 18th BoS meeting to the members of Board of Studies.

Agenda:

1. To get approval for the 17th BoS minutes.
2. To get approval for the Syllabus R22 from Semester 05-08 B.E.(CS), B. Tech.(AD), B.Tech. (IT).
3. Approval for the verticals syllabus of R22 for B.E.(CS), B. Tech.(AD), B.Tech. (IT).
4. Discussion and Approval for new Value Added Course for B.E. (CS) and B.Tech.(AD)
5. Discussion on engaging the Professor of Practice
6. Discussion on the modality of delivering the courses for Honors/ Specialization and Minor degree
7. Presenting the academic results obtained in previous semester – OS2023-24
8. Approval for Value Added Courses B.Tech. Information Technology

BoS Chairman requested the approval of the 17th BoS minutes and all the BoS members approved the previous Board of Studies minutes and the Chairman thanked all the members for the approval of the 17th BoS minutes. The meeting started with the agenda.

Discussion on Regulation 2022 Curriculum of B.E. [CS]

Semester 05:

BoS Chairman, presented the syllabus of fifth semester B.E. (CS) to all the BoS members. Prof. Khanna Nehemiah, suggested that in "**Computer Networks**" to include additional concepts on IPV4 and IPV6 in detail in **Unit 02 or 03**.

Prof. Khanna Nehemiah, suggested in **Software Engineering** to include phases and models of

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Software Development Life Cycle [SDLC] under Unit 01. Dr. Arivoli suggested to include types of Coupling and Cohesion in Unit 02 or Unit 03. Prof. Khanna Nehemiah, suggested to exclude Risk Management and Quality Management from the subject "Software Engineering" and to add the risk concepts in "Software Project Management".

Mr. Harikumar, suggested to revisit and revise the syllabus of "User Interface Technologies, and also the BoS members suggested to **replace Unit 04** and **Unit 05 with Front End concepts of Web Scrapping and Web Development and Human Computer Interface** concepts. All BoS members suggested removing **No SQL, MONGO DB** operations. Members also suggested that UI/UX design shall be incorporated in the syllabus. BoS Chairman, informed that, the "User Interface Technologies" is offered by Infosys and she also informed that the observations of the BoS Members will be shared with Infosys for further scrutiny. **Prof. Khanna Nehemiah,** suggested to revise the syllabus of "**Theory of Computation**" and informed that the syllabus shall be in line with the **GATE syllabus.** And also to update the syllabus with the topics "**Automata in Circuit Design based application, Automata in Control systems, Automata in Processor Design and Automata in String matching**". He also recommended recent edition of text book by "Aho Ullman" for inclusion of Engineering applications in the syllabus. **User Interface Technologies Laboratory:** Mr. Harikumar, suggested to revise the laboratory in line with the proposed changes in theory and also to exclude Type Scripts and Servlets exercises.

Semester 06:

Dr. Masilamani suggested that in **Software Project Management,** in **Unit 1** contents shall be reduced and also to remove Cost Estimation concepts, as the topic is covered in Software Engineering.

Dr. Khanna Nehemiah, suggested that in Unit 02, Risk management concepts shall be moved to "**Software Quality Assurance and Testing**", so that Unit 1 shall be précised and also to split the Cost Benefit Analysis in two different units, and he also suggested to refer Bob Hughes for Unit 5. Dr. Khanna Nehemiah also suggested to remove Unit 5: "**Staffing in Software Projects**" and to add "Role of a Project Manager, Project Management Models, Motivation and Team working" related concepts in Unit 05.

BoS Members suggested ensuring no repetition of concepts in both core courses and vertical courses. Dr. Umamaheswari, suggested that in "**Internet of Things and Applications**", Unit 02 shall be swapped with Unit 05, as application relevant concepts shall be discussed at end of every unit for the better understanding of the subject.

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Dr. Masilamani and Mr. Harikumar has enquired whether Open Stack, Open Source applications and Elasticity were included in the course "**Cloud Computing**". Dr. Anitha informed that the **Elasticity** concepts are covered in detail in **NIST reference** architecture under **Unit 01**.

Semester 07:

Dr. Masilamani, suggested to include concepts related to **publication ethics** so that students will have better exposure towards research ethics and also gain knowledge about publication. He also informed that the course will also help the students after the employment.

Discussion on Regulation 2022 B.Tech.[AD] Curriculum:

Semester 05:

BoS Chairman, presented the curriculum of B.Tech.- AD to the new expert member Prof. Khanna Nehemiah and syllabus from fifth semester onward is also presented. Prof. Khanna Nehemiah suggested that the subject "**Automata Theory and Compiler Optimization**" shall be renamed as "**Automata Theory**", and also suggested to ensure that the syllabus is in-line with GATE syllabus.

Semester 06 & 07:

In the subject **Deep Learning Algorithms**, the BoS members suggested to include practical sessions in each unit. They also suggested replacing "**Multilayer Perceptron**" with "**Deep Neural Network**" in unit 2. Dr. Umamaheswari, suggested to add **Deep Neural Network problems, and Data Augmentation** problems instead **XOR Problems**.

Mr. Harikumar and Mr. Srinivasan suggested to include **Hyper Parameters tuning concepts** in Unit 03, and to add bio inspiring algorithm, transfer learning based algorithms in unit 4 & 5 respectively.

For the subject **Reinforcement Learning** Prof. Khanna Nehemiah, suggested to split Unit 02 into Unit 01 & Unit 02, and also to remove existing deep learning topics in Unit 01.

Dr. Masilamani, suggested to introduce **Dynamic programming and Temporal difference learning in Unit 3**. Dr. Arivoli and Mr. Harikumar, suggested to add Deep Reinforcement Learning and its case studies in Unit 05.

In subject Health Care Analytics, Dr. Masilamani and Dr. Arivoli, suggested to rename "Introduction to Deep Learning" as "Revisit of Deep learning", also to rename Unit 03 as "Biomedical Data Processing". All the BoS members suggested to remove Genomic Data Analysis and to replace with Medical CT-Processing.

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Discussion on Value Added Courses:

BoS Chairman informed the members that a new Value Added Course, **Generative AI for Software Development** is introduced in regulations R22 curriculum. After seeing the syllabus all the BoS members have approved the course and also suggested that the course shall be handled by an industry expert with suitable case study. BoS chairman informed that the value added course Generative AI for Software Development will be handled by the industry expert Mr. T. Srinivasan, CEO, Glosys Technologies, who is appointed as Professor of Practice in the department.

Discussion on Verticals B.E.[CS] & B.Tech. [AD]

BoS Chairman, has informed the members about the awarding of **Honors, Specialization and Minor** degree options to the students admitted under regulation R22. She has presented the syllabus of courses listed under different verticals. Dr. Umamaheswari and Dr. Masilamani has suggested to offer bridge course/ audit course for the students who are interested in minor degree. BoS members suggested ensuring pre-requisite for opting Advanced AI based subjects and with machine learning concepts in earlier semesters before opting the verticals. In the course **Explainable AI**, Prof. Khanna Nehemiah, suggested to include few modern interpretability algorithms.

Vertical –Artificial Intelligence and Machine Learning:

The members informed that the Course titled "Soft Computing" shall be replaced with "Reinforcement Learning". And the course "Neural Network & Deep Learning" shall be renamed as "Deep Neural Networks".

Vertical - Cloud Computing and IoT:

Mr. Harikumar has suggested to change the name of the course "Containerization and DevOps" to "DevOps and Containerization", Mr. Harikumar, suggested to include practice session for "DevOps Containerization" and "Cloud Services Management". BoS members concluded to ensure repetition of concepts covering the syllabus with core subjects Dr. Umamaheswari suggested to remove Data storage technique and to replace it with any course related to IoT. Dr. Masilamani suggested adding the course "IoT Automation" replacing Data Storage technique. All BoS members approved the same.

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Vertical: Multimedia Systems

Members suggested to change the name of the course "Image Signal Processing" as "Digital Image Processing Techniques". BoS members suggested to remove the concepts of Graphics and multimedia. BoS members suggested to include fundamental steps in Digital Image Processing and to ensure the book with Fundamental concepts coverage. Dr. Masilamani, suggested to include "video processing" concepts in Unit 04, also suggested to include 3D printing related course under this vertical.

Diversified Group:

In the course Graph theory members have suggested to include types of graph and directed graph in Unit 01. Members also suggested that the syllabus for the course Software Quality Assurance and Testing shall be same as given in Information Technology. In the course Advanced User Interface Technologies BoS members, suggested to include concepts on Angular JS, and to differentiate services, roll over standards and network slicing algorithms.

Vertical: Information Security and Cyber Security

In the course Identity Management and Access control Models members suggested including Forensics concepts, and more concepts on development of Open source services like Google IAM, Azure IAM and AWS IAM in Unit 05. Members enquired whether the focus is to have 5G standalone slicing or from 4G in the course 5G Security and Challenges. Members also informed to add cybercrime topics and intrusion detection, phishing attack and Trojan concepts in Cyber Security and in Malware Analysis respectively.

Vertical: Data Analytics

Members suggested to elaborate the course content in the course Exploratory Data Analysis. They also suggested to include Testing of Hypothesis and remove Data Cleaning topics in Unit 5. In the course Distributed Databases and Analysis members suggested to include streaming and also to include Neo DB in Unit 2. Members suggested to include the concepts of Video Analytics in Image and Video Analytics. Members also suggested to revisit the syllabus MLOps: Machine Learning Operations.

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Semester 6

Dr. Umamaheswari and Prof. Khanna Nehemiah recommended to include Introduction on Big data in Unit-1 in the course **Big Data Analytics**. They suggested to reduce the content in Unit-5. It was recommended to have Big Data in Unit-1 and Cloud Computing in units 2 to 5. The members suggested to elaborate on the topic "Docker" and include CRUD operations should be included in Big Data Lab syllabus. During the discussion, the possibility of offering Big Data and Cloud Computing as separate subjects was pitched. The HOD/INT noted the idea and recorded to look into the implementation and revert. Prof Srinivasan insisted to change the total no of hours for big data analytics lab.

Dr. Umamaheswari and Prof Khanna Nehemiah recommended to include Data Security topics in **Information Security** and implementation of firewall using tables. The members suggested to reduce the syllabus in unit-4 of the course **Internet of Things (IOT)** and remove exercise 7 in IOT Laboratory.

Semester 7

Prof. Khanna Nehemiah has recommended to include Over fitting, under fitting topics in the course **Machine Learning Techniques**. The members suggested to include cybercrime topics in the course **Cyber Forensics**. Also, they suggested to elaborate the syllabus. Mr. N Hari Kumar recommended to include Cellebrite tool in the course **Cyber Forensics laboratory**.

Vertical - Data Science

Prof. Khanna Nehemiah suggested to check the redundancy of topics in the courses Deep Learning and Natural Language Processing. He also recommended to include textbooks with latest edition for all the courses. Dr. Umamaheswari suggested to include the following topics need to be included graph modelling, 6 degree of freedom, Barabasi algorithm in the course Social Network Analysis.

Vertical - Diversified group

Mr. N. Hari Kumar suggested to include V-model verification and validation testing in the course **Software Testing tools and Techniques**. He also recommended to include Graph QL in the course Service Oriented Architecture.

Vertical: Networking & Cyber Security

Dr. Masilamani suggested to incorporate the following points while framing the syllabus.

- For Minor degree, simplified courses can be included.
- Same verticals cannot be given as honor and minor.
- Number of textbooks can be restricted to one or two.

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Vertical: Intelligent Systems

Members suggested that the course **Web Mining** should cover the concepts of web structure mining, web content mining and web usage mining. In course Evolutionary Mining the members suggested name the evolutionary algorithms in specific.

Vertical: Fintech and Healthcare

Members suggested to elaborate the syllabus in Finance Engineering. Members informed that enough care should be given to avoid the repetition in the course Data Science in Intelligent Healthcare and Computer Vision in Healthcare Applications.

Vertical: Full Stack and Development

Members suggested to add lean and descent topics in the course **Agile Methodologies and also to reduce the content in Unit 5.** Members also suggested to swap Unit 1 and Unit 5. Dr. Umamaheswari informed that the syllabus follows the flow of the text book and it can be maintained the same. syllabus in Finance Engineering. Members informed that the course Front end and Middleware Technologies and Software Testing and Quality Assurance shall be revisited.

Department of Information Technology

Dr. V. Vidhya, HOD/INT welcomed all the Board of Studies members and other members of the faculty to the meeting.

Semester 5

Dr. Umamaheswari and Prof Khanna Nehemiah suggested to reduce the content in unit 3 and change unit 5 in the course **Computational Intelligence.** They suggested to remove units 3 to 5 in Automata and Compiler Design course and recommended to provide NLP based Compiler Design as a Value-Added Course. The members suggested to include UI/UX design in the course **User Interface Technologies.**

Dr. Umamaheswari and Prof. Khanna Nehemiah suggested to prescribe the book authored by Kurose as the text book for the course **Data Communication and Networking.** The members recommended to include topics on adaptive and non-adaptive routing. Dr. Umamaheswari recommended to remove socket programming from Unit-1. Dr. Arivoli suggested to include Interconnecting devices like switch, routers, and gateways in Unit-1. She also recommended to include types of switching, super netting, RARP, error correction in Unit-2 and remove virtualization in unit-5.

Sri Venkateswara College of Engineering
(An Autonomous Institution–Affiliated to Anna University, Chennai)

Vertical: Embedded System and IOT

Prof. Khanna Nehemiah recommended to include Embedded C for ARM processor and Real time OS in the course Embedded & Real time System. He also suggested to include simulation exercise in the course Unmanned Vehicle System.

Vertical: Multimedia Technologies

Prof. Khanna Nehemiah recommended to reduce contents in the course Graphics & Multimedia and Machine Vision. He also suggested to include some Industrial application in the courses.

Vertical: High Performance Computing

Prof. Khanna Nehemiah and Dr. Umamaheswari recommended to reframe the syllabus for Green Computing and Next Generation Network. The members also suggested not to offer same verticals for Honors and Minors.

Dr. R. Anitha has informed members that the department of CSE and INT have appointed the industry experts as visiting professors under Professor of Practice scheme. Members suggested that the experts shall handle the courses covering industry applications and also to share the trends in industry with students. Chairman also informed that the department of CSE and INT is revisiting the Vision and Mission to be in-line with the new Vision and Mission of the institute. She also informed that the stake holders meeting is scheduled to revisit the Vision and Mission, PEO and PSO. At the end, the results of the end semester examinations held in December 2023 was presented to the members.

Finally, HoD/ CSE & HoD/ INT thanked the members and informed the members that the suggestions will be incorporated suitably.

Resolutions:

1. Members approved the Syllabus from Semester 05-08 for B.E.(CS), B. Tech.(AD), B.Tech. (IT) for the regulations R22.
2. BoS members approved the syllabus for the verticals B.E.(CS), B. Tech.(AD), B.Tech. (IT).
3. It is approved to add the value added course Generative AI for Software Development for B.E. (CS) and B.Tech.(AD)
4. As there were no more points, the meeting came to an end.

Chairman
Dr. R Anitha, Chairman – BoS
Board of Studies
Faculty of Computer Science and Engineering & Information Technology
Sri Venkateswara College of Engineering
Pennalur, Sriperumbudur (Tk) - 602 117