K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE – 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of Board of Studies Meeting

Department of Mechanical Engineering

27.11.2023

S. No.	BoS Meeting No.: 25			Date:	24.11.2023	Venue:	Conf. Hall & MS Teams
	Agenda	**Name & Nominee**	**Discussion/Suggestion**	**Action to be taken**	**Responsibility**	**Target**	**Rem.**
1.	**Curriculum and syllabi of V& VI Semester of UG courses R2022**	Dr.S.Selvi, University Nominee & Dr.P.K.Rajesh Academic Expert	- **60 ME 501 Automobile Engineering**: Suggested to include two text books that to one foreign author and one Indian author. - Also, insisted to offer the course with hands on training/field visits/ Practical session (integrated course) and the mode of delivery may be planned accordingly.	- Based on the suggestion, the two text books have been included. - As per the suggestion, the cited course is offered as the integrated course.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.S.Selvi, University Nominee & Dr.P.K.Rajesh Academic Expert	- **60 ME 5P1Thermal Engineering Laboratory:** Suggested to include MATLAB experiments. - Also, insisted to include experiment 'p-θ diagram and heat release characteristics of an IC engine'	- As per the suggestion, the experiments have been rearranged with MATLAB. - The experiment titled 'p-θ diagram and heat release characteristics of an IC engine" is included'.	Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-

12/12/23

	Curriculum and syllabi of V& VI Semester of UG courses R2022	Dr.S.Selvi, University Nominee & Dr.K.Shanmugasundaram Academic Expert	- **60 ME 5P2- Dynamics and Metrology Laboratory:** Suggested to combine the metrology lab and dynamics lab as the theory course is covered in 4th semester.	- As per the suggestion from the members, the experiments were framed and offered in 5th semester.	Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.S.Selvi, University Nominee & Dr.K.Shanmugasundaram Academic Expert	- **60 ME 603 Design of Mechanical Transmission Systems:** Insisted to rephrase the title of the first module as "Flat belts, V-belts and Chains" to have better clarity.	- The title of the first module is rephrased based on the suggestion given by the experts.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.S.Selvi, University Nominee & Dr.P.K.Rajesh Academic Expert	- **50 ME 6P1 Heat Transfer Laboratory:** Suggested to remove the virtual lab links as it leads to ambiguity. The course instructor may facilitate the learners to exercise the same. - Suggested to include critical heat flux experiment in the syllabus.	- Based on the suggestion by the expert member, the virtual lab links were removed. - 'Critical heat flux' experiment is included in the syllabus.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.S.Selvi, University Nominee & Dr.K.Shanmugasundaram Academic Expert	- **60 ME E13- Composite Materials and Mechanics**: Suggested to rearrange the contents of the course.	- Based on the suggestion, the contents were rearranged to have better clarity.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-

		Mr.Daniel Robert Alumni	- **60 ME E22 Design of Jigs, Fixtures and Press Tools**: Suggested to include the turret punch press in the 3rd module.	- The content suggested by the member is included in the course.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.S.Selvi, University Nominee & Dr.K.Shanmugasundaram Academic Expert	- **60 ME E23 Design for Manufacturing and Assembly**: Suggested to have case studies for any one module not all the modules.	- As per the suggestion, the case studies were included for the 3rd module only.	Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.K.Shanmugasundaram & Dr.P.K.Rajesh Academic Experts	- **60 ME E25 - Internal Combustion Engines**: Suggested to include two text books that to one foreign author and one Indian author. - Also, insisted to offer the course with industry supports. It will give exposure to students.	- Based on the suggestion, the two text books have been included. - As per the input from the members, the cited course is offered industry inputs (Jayam Automobiles)	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.S.Selvi, University Nominee & Dr.PK.Rajesh. Academic Expert	- **60 ME E32 Welding Technology**: Suggested to include thermal stresses, defects in welding and troubleshooting in the 5th module. Also, insisted to remove the contents "various welded joints".	- As per the suggestion from the experts, the redundant contents were removed and the required changes were incorporated.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-

		Mr.Daniel Robert Alumni & Mr Anand Edwin Industry Expert	- **60 ME E34 - Logistics and Supply Chain Management**: Suggested to include the content 'Regional sourcing' in the 2nd module.	- As per the suggestion from the experts, the content was incorporated.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
		Dr.S.Selvi, University Nominee & Dr.PK.Rajesh. Academic Expert	- **60 ME E35 - Renewable Sources of Energy**: Suggested to include geothermal energy and tidal energy. - Insisted to include methanol production in the 4th module.	- Based on the suggestion from the members, the cited contents were incorporated.	Course instructor, Course Coordinator, Module coordinator and Programme coordinator	Submitted to Academic Council for approval	-
2	**Revision in the Curriculum and syllabi of IV semester R 2022**	Dr.KShanmugasundaram Academic Expert & Mr.Daniel Robert Alumni	- **60 ME 406 Applied Hydraulics and Pneumatics**: Suggested to offer practical oriented hands on session (integrated mode) for the course.	- The cited course content is revised with hands on training to have better understanding.	Course Coordinator, Module coordinator, Programme coordinator	Submitted to Academic Council for approval	-
	Revision in the Curriculum and syllabi of VIII Semester R 2018 of UG.	Mr.Daniel Robert Alumni & Mr.Anand Edwin Industry Expert	- Members suggested to offer Power Plant Engineering, Renewable Sources of Energy and Plastic Manufacturing Processes as open elective courses to attract other department students.	- The cited open elective courses were included in the curriculum from 2023-24 (EVEN sem) academic year.	BoS Chairman & Programme coordinator	Submitted to Academic Council for approval	-

3.	**Minor and Honour degree courses curriculum and syllabi in R2022 and R2018** **Discussion/Suggestion:** - As per the guidelines from Anna University, Chennai, Department of Mechanical Engineering proposed to offer Honour degree programme from 2021 admitted batch (R2018) onwards based on the eligibility conditions (CGPA – 7.5 and above without history of arrear for Honours; CGPA – 7.5 and above without standing arrear for minor degree). - Proposed curriculum and syllabi for the Honours Degree were presented and the suggestions were sought by the BoS Chaiman. The list of courses are as follows: • 50 ME H01/60 ME H01 - Reverse Engineering • 50 ME H02/60 ME H02 - Optimization Techniques in Design • 50 ME H03/60 ME H03 - Integrated Product Development • 50 ME H04/60 ME H04 - Micro and Precision Engineering • 50 ME H05/60 ME H05 - Quality Engineering • 50 ME H06/60 ME H06 - Surface Engineering - MoU with industry may be planned to offer Honours degree and the courses under this degree programme are to be accommodated from 5 to 7 semesters and the same is to be reflected in the Regulation itself. **Action Taken:** - The curriculum and syllabi of Honours Degree programme proposed by the BoS Chairman were passed in the meeting and submitted to Academic Council for approval.
4.	**List of open elective courses offered in 2023-24(ODD Semester)** - The following open elective courses were offered in 2023-24 (ODD Semester) 1. 50 ME L01 Rapid Prototyping, 2. 50 ME L02Product Design for Manufacturing 3. 50 ME L03 Composite Materials 4. 50 ME L06 Additive Manufacturing **List of open elective courses to offer in 2023-24 (EVEN semester)** **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee &Dr.P,K,Rajesh, Academic Expert, suggested to offer open elective courses which attract other department students that to useful for the skill development and placement. **Action Taken:** - Based on the discussion, it is proposed to offer the following open elective courses in 2023-24 (EVEN semester) 1. 50 ME L04 Quality Control and Reliability Engineering

	2. 50 ME L05 Logistics Management 3. 50 ME L07 Computational Fluid Dynamics 4. 50 ME L08 Power Plant Engineering 5. 50 ME L09 Renewable Sources of Energy 6. 50 ME L10 Plastic Manufacturing Processes - It is resolved to submit the proposal to Academic Council for approval.
	List of value-added courses offered in 2023-24 (ODD Semester) and planned to offer in 2023-24 (EVEN semester) **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee, Dr.P,K,Rajesh, Academic Expert, Mr.Daniel Robert, Alumni, Mr.Anand Edwin, Industry Expert suggested to offer industry related value added courses to suit the current requirements. **Action Taken:** - It is proposed to offer the following value added courses from 2023-24 academic year onwards. 1. CATIA 2. Solidworks 3. Piping Design - It is resolved to submit the proposal to Academic Council for approval.
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG)** **I. Total No. of credits for the UG programme** **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee, Dr.K.Shanmugasundaram, Academic Expert, Mr Sureshkumar Perumalsamy and other members have gone through the proposed curriculum of Mechanical Engineering (UG) under Regulation R 2022. **Action Taken:** - As per the discussions, it is resolved to continue with 164 credits for B.E Mechanical Engineering in R2022 and ssubmitted to Academic Council for approval.
	II. Preparation of curriculum from I to VIII semester subjects R2022 & Recommendations **Discussion/Suggestion:** - Discussions were made regarding the guidelines issued by AICTE, UGC and Anna University to meet the requirements of industry as per the NEP 2020. - Dr.K.Shanmugasundaram & Dr.P.K.Rajesh Academic experts suggested to rename the course Rapid prototyping with "Additive Manufacturing" in Professional Elective I.

	Action Taken: - As per the discussion, the directions/guidelines issued by competent authority are followed. - Based on the suggestion received from the experts, Rapid prototyping was renamed as "Additive Manufacturing" in Professional Elective I. - It is resolved to submit the curriculum of R 2022 to Academic Council for approval.
	III.Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups& Entrepreneurship & Crosscutting issues - Dr.P.K.Rajesh and Dr.K.Shanmugasundaram, Academic Expert appreciated that the R 2022 curriculum of the Mechanical Engineering programme will meet the requirements to pursue higher education & carrier guidance and startups& entrepreneurship as well.
	IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students - Dr.S.Selvi and Dr.K.Shanmugasundaram , Academic Expert appreciated that the proposed R 2022 curriculum & syllabi will enrich innovative, design & critical thinking skills and problem solving abilities of students.
	V. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee, &Dr.K.Shanmugasundaram, Academic Expert suggested to continue with virtual laboratory contents available in web platform of Amrita Vishwa Vidyapeetham University, Coimbatore. - It is resolved to submit the proposal for the approval in Academic Council.
	VI. New courses offered **Discussion/Suggestion:** - Members suggested to focus on current trends in Mechanical Engineering which will be useful for placement, higher studies and entrepreneurship. **Action Taken:** - Based on the suggestion from the members and focused on the latest technology in Mechanical Engineering following new courses are introduced compared with R 2018 for betterment of placement, higher studies and entrepreneurship. 1. Fabrication and Reverse Engineering Laboratory 2. Piping Design, 3.Industrial Tribology 4. Drone Technology 5. Manufacturing Information System 6. Additive Manufacturing 7. Precision Engineering 8. Augmented Reality /Virtual Realty 9. Climate Change and New Energy Technology

	10. Energy Conservation in HVAC System 11. Machine Learning - It is resolved to submit the proposal to Academic Council for approval and will be implemented in the R 2022.
6	**Discussion on Choice Based Credit System** **I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (ODD sem.) and planned to offer in EVEN semester of 2023-24** **Discussion/Suggestion:** - Dr.K.Shanmugasundaram, &Dr.P.K.Rajesh, Academic Expert suggested to offer self-study courses from 3rd semester onwards that to one course per semester. - The following courses were completed by both faculty and students under NPTEL during 2023-24 (ODD semester) 1. Understanding Design 2. Innovation by Design 3. Manufacturing Process 4. Product Design and Development 5. Power Plant Engineering 6. Machine Learning 7. Laser Beam Manufacturing 8. Automation in Production System 9. Python for Data science - In line with curriculum of R 2022/R 2018, student can opt for the NPTEL and ICT academy courses based upon the industry needs. - It is resolved to submit for the approval in Academic Council.
	II. One credit course offered in 2023-24 (ODD semester) and planned to offer by industry in 2023-24(EVEN semester) **Discussion/Suggestion:** - Members appreciated the efforts made to conduct one credit courses namely "Weldability of Materials" in 2023-24 (ODD semester). **Action Taken**: - We are planning to conduct the following one credit courses in 2023-24(EVEN semester) 1. Welding Engineering 2. Welding Processes 3. 3 D Printing 4. Non -Destructive Testing 5. Design for Manufacturing 6. Cogeneration 7. Alternative Fuels for IC Engines in association with industry collaboration.

	- The knowledge of industry person is effectively utilized to enrich the skill of students in order to promote employability. - The proposal is submitted to Academic Council for approval.
	III. Skill based courses offered in 2023-24(ODD semester) and planned to offer 2023-24(EVEN semester) **Discussion/Suggestion:** - Members suggested to offer the skill based courses that will improve the technical skill of the students. The following skill based courses were planned to offer in 2023-24(Even semester) 1. Hands on Practice: Laser Cutting &Wood Carving 2. Hands on Practice: TIG and MIG welding 3. Hands on practice: CNC Training - Value added –Life skill courses 1. Yoga for Human Excellence 2. Six-sigma Happiness and Mind Mechanics 3. Digital wellness Course 4. Youth Empowerment and skill **Action Taken:** - The proposal is submitted to Academic Council for approval.
	IV. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. **Discussion/Suggestion:** - Dr.K.Shanmugasundaram, Dr.P.K.Rajesh, Mr Daniel Robert, Alumniand Mr.A.Anand Edwin, Industry Expert insisted to motivate the students to participate the more number of hackathon, design contests and Ideathon etc. to improve the knowledge and skill development which could be useful for placement activities and higher studies.
	V. Evaluation & course outcome plan for integrated courses,Projects based &System Based Courses. **Discussion/Suggestion:** - As per the suggestion, it is decided to proceed with existing process for evaluation & course outcome plan for integrated courses. - Submitted for the approval in Academic Council.
	VI. Internship details of students (2nd , 3rd & 4th Year) **Discussion/Suggestion:** - BoS members suggested to undergo internship from 3rd semester onwards offered by core companies during summer and winter vacations. - Students were motivated and undergone internship during 2023-24 academic year.(123 students –final year;79 students-pre final year) Submitted for the approval in Academic Council.

7	**Stake holders feedback and action taken** **Discussion/Suggestion:** - The following stake holders (Employer, Alumni, Faculty and Students) have given the feedback related to curriculum design and development. - Dr M Krishnan, AE, TWAD Board suggested to incorporate eco-friendly power generation in conventional power plants with new technology. - Mr.V.Mohanraj, BGR Energy System, Chennai suggested to have an industrial visit to manufacturing industries and include turret punch press and skills on 3-D modeling & AI based tools as it would help them to be industrial ready for Design of Jigs, Fixtures and Press Tools. - Mr.R.Samiraj, suggested to include preferred numbers in the design of Machine Elements course. - Based on the feedback from stake- holder's the following open elective courses like Power Plant Engineering and Renewable Sources of Energy may be offered as professional electives in R 2018 &R2022. - Student members suggested for seminar presentation in latest topics and laboratory demo for the theoretical courses **Action Taken:** - Based on the suggestion from stake holder, the content of course are revised and submitted to Academic Council for the approval.
8	**Suggestions from IQAC** - For language electives, International Certification courses and social internship 3 credits shall be offered. - 2 Courses under professional electives may be waived upon completion of NPTEL courses with equivalent grading. - At least one course in a semester should be offered with case study based assignment instead of regular assignment. (Presentation is mandatory along with the report) - 3 Credits can be offered to students as waiver or additional credits for the winner of any national level technical contests/hackathon. - Monitory benefits shall be offered to GATE scorers and 3 credits shall be waived. - The suggestion given by the IQAC is submitted to standing committee and Academic Council for approval.

9	**Any other matters** **Question Paper Reforms - Internal and End Semester Examination** - Examination pattern can be followed as per the directions from the Head of the Institute since it is common for all the branches.
	Suggestions and permission to start new programmes in thrust areas - Dr.S.Selvi, University Nominee and other members suggested to start the real time practical oriented courses (2 years or 1 year courses) based on the demand. - Short term certificate courses which suit current industry requirements(industry sponsored courses) may be started (E.g. Robotics and Automation) - Submitted for the approval in Academic Council.
	Introduction of Tamil courses and its assessment in R2022 as Extra credits **Discussion/Suggestion:** - Members suggested to introduce the one Tamil course in 1st and 2nd semester that to one credit each. - As per the direction from Anna University, Heritage of Tamil, Tamil and Technology courses are offered in 2nd and 3rd semester from 2022 batch. 1st and 2nd semester from 2023 batch onwards.
	NCC as additional Credit \Waiver in R2022,2018 - Members suggested tofollow as per the directions from the Head of the Institute since it is common for all the branches.

12.12.25.

Dr.A.Murugesan
BoS-Chairman
Mechanical Engineering (UG&PG)
K.S.Rangasamy College of Technology
Tiruchengode - 637 215

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Minutes of the Board of Studies Meeting

Department of Civil Engineering

BoS Meeting No: 25				Date: 21.11.2023	Venue:		Technology Innovation Conference Hall
S.No	Agenda	Name & Nominee	Discussion/Suggestion	Action to be taken	Responsibility	Target	Remarks
1	**Curriculum and syllabi of V & VI Semester of UG & PG courses R2022**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert)	Curriculum and Syllabi of V semester and VI Semester of R2022 was presented and the following suggestion given, In UG Curriculum 1. Basic of Reinforced Concrete Design can be renamed as Design of Concrete Structural Elements in V Semester 2. In Professional Elective II, Air pollution management can be renamed as Air Pollution and Management. In PG Curriculum 1. In Elective II, Non-linear analysis of structures can be renamed as Non-linear finite element analysis. 2. In Elective V, Aseismic Design of Structures to be renamed as Earthquake design of structures. All Members appreciated the Curriculum of UG and PG	Based on the suggestion the necessary correction is carried out updated in the syllabi of R2022 for the batch 2023-2024	BoS Chairman	Immediate	Submitted for the approval of Academic Council
		Dr.M.P.Muthuraj (University Nominee)	Dr.M.P.Muthuraj suggested that In all coursed of V and VI semester the text book to be updated with the latest editions and to include the NPTEL Course link in the references. In 60CE501- Structural Analysis II, ILD and moving loads for statically determinate structures to be added instead of Approximate method of analysis. In 60CE601- Advanced reinforced concrete design, the content IS 13920 to be removed. In 60CE602- Design of Steel Structures, , in last module, Element of Trusses to be removed. Remove the Design of Gantry girder				

			and add the Design of Corbels. Also add Concepts only for the Roof trusses.				
		Dr.B.Palani (Subject Expert)	Dr.B.Palani suggested that the Approximate method of analysis to be included in Advanced Reinforced concrete design. Also given suggestion that in 60CE503- Basic of Reinforced Concrete Design, the yield line theory to be removed from the module II. In 60CE6P1- Concrete and Highway laboratory, Compaction factor and Vee bee test to be removed and add the Flow table test for Self compacting concrete. Also add as vee- bee test for Geopolymer concrete				
		Dr. Ibrahim Bathusha M (Subject Expert)	Dr. Ibrahim Bathusha M suggested in 60CE504 – Highway, Railway and Airport Engineering to be renamed as Highway and Railway Engineering and contents to be kept as 3 modules in Highway and 2 modules in railways. Also suggested that BOD of wastewater to be removed from 60CE5P2- Environmental Engineering Laboratory. In 60CE603- Hydrology and water resources engineering can be renamed as Hydrology and Irrigation Engineering and three modules to be in Hydrology and two modules to be in irrigation.				
2.	**Revision in the Curriculum and syllabi of II semester R2022 UG & PG.**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert	The curriculum and syllabi of II semester of R2022 UG and PG is presented and the following suggestions were given **Suggestion given :** Dr.M.P.Muthuraj suggested in 60CE201- Applied Mechanics to remove the Module Beams and to add in the Strength of Materials in III semester. Dr.B.Palani suggested in Fist module of 60CE201- Applied Mechanics add the topics like Lame's Theorem, Triangle law, Varigon's Theorem under Laws of Forces. Dr. Ibrahim Bathusha M suggested to add the Moment of Inertia as third module in Physics for Civil Engineering	Based on the suggestion the content is modified and updated in the syllabi of R2022	BoS Chairman	Immediate	Submitted for the approval of Academic Council

3.	**Minor and Honors degree courses Curriculum and Syllabi in R2022 and R2018.**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert	Members suggested that the honors can be opt for those students who scores CGPA greater than 7.5. The following course is added as the Honors degree for R2018 50CEH01 – Green Buildings 50CEH02- Repair and Rehabilitation of Structures 50CEH03- Building Services 50CEH04- Prefabricated Structures 50CEH05- Architecture and Town Planning 50CEH06- Traffic Engineering and Management The following course is added as the Honors degree for R2022 60CEH01- Construction Techniques and Equipments 60CEH02- Groundwater Engineering 60CEH03- Dynamics and Earthquake Engineering 60CEH04- Intelligent Transport System 60CEH05- Environmental Quality Monitoring 60CEH06- Conceptual Planning and Bye laws. The following courses is for minor degree for R2022 Construction Technology, Surveying Practices, Water and Air Pollution Management, Transportation Engineering, Structural Analysis and Design, Geotechnical Engineering. The syllabi of the Honors courses and minor courses was discussed and same was approved	Same was approved by the Members	BoS Chairman	Continuous	Submitted for the approval of Academic Council
4.	**List of open elective courses and value-added courses offered in 2023-24 (ODD Semester) and planned to offer in 2023-24 (Even semester)**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M	**List of open electives and respective Syllabi were presented** The open elective to be offered in the Even semester of 2023-2024 are 50CEL03- Waste Management Techniques. 60CEL01- Waste Management Techniques. 60CEL09- Fundamental of Civil Engineering	Same was approved by the Members	BoS Chairman	Continuous	Implemented in R2018 for the academic Year 2023-2024 (ODD Semester)

		(Subject Expert	The open elective offered in 2023-2024 Odd Semester is 50CEL02 – Disaster Management and mitigation measures. The value-added course planned to offer in the Even semester (2023-2024) for UG are 1. Building Information Modelling. 2. Rebar & Structural Detailing 3. Project Management The value-added course planned to offer in the Even semester (2023-2024) for PG 1. Awareness on NDT Methods				
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)** I. Total No. of credits for the UG programme II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & cross cutting issues. IV. Curriculum & syllabi should improve innovative, design &	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert	The Curriculum and Syllabi of R2022 of UG and PG was Presented was Presented Proposed Curriculum of Civil Engineering (UG) R2022 is 162 credits. For M.E. Structural Engineeing (PG) R2022 is 73 credits. Dr.M.P.Muthuraj and Dr.B.Palani suggested the following., Change the course name of 60CEE31-Repair and Rehabilitation of Structures as Health Monitoring of Structures. 60CE701- Prestressed Concrete change to Prestressed Concrete structures Dr. Ibrahim Bathusha M suggested to change the name of the course 60CE403- Watersupply and wastewater Engineering as Water Supply and Sanitary Engineeing Members appreciated that the prescribed Syllabus content of PG (M.E – Structural Engineering) are within the requirements of AICTE. The curriculum and syllabi is complying with GATE 2023 Syllabus Members also approved the following course for Ph.D Course Works.	Recommended the Same	BoS Chairman	Immediate	Implemented in R2022 for the batch 2022-2023 and 2023-2024

	critical thinking skills and problem solving abilities of students V. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories VI. New courses offered		• Advanced Groundwater hydrology • Environmental Monitoring Instruments • Groundwater Modeling and Management • Municipal solid waste management • Secondary treatment of wastewater • Industrial wastewater pollution - prevention and control • Principles and design of biological treatment system • Transport of water and wastewater • Remote sensing and GIS for hydrology and water resources • Principles and design of physico-chemical treatment systems				
6.	**Discussion on Choice Based Credit System** I. Self – Study courses SWAYAM / NPTEL / MOOC courses offered in 2023-2024 (ODD Semester) and planned to offer in Even Semester of 2023– 24. II. One credit course offered in 2023 – 24 (ODD Semester) and planned to offer by industry in 2023 – 24 (Even Semester). III. Skill based courses offered in 2023-2024 (ODD Semester) and planned to offer in 2023 – 24 (Even Semester). IV. International Certification completed to 2023-2024 with credits V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc., VI. Evaluation & course	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert	NPTEL courses Planned for the students for 2023-2024 Even semester are • Introduction to Civil Engineering Profession. • Basic Construction materials. One Credit courses planned to offer are • Total Station & Digital Surveying • NBC – Bye Laws (Civil) • Energy Conservation in Building Construction • Bill of Quantities and Valuation • Engineering Professional Practices • Flood and Draught management Value added courses planned to offer in 2023-2024 (Even Semester) • Building Information Modelling • Rebar and Structural Detailing • Project Management **Internship for Students (2nd, 3rd & 4th Year)** 2 Weeks-1 Credits 4 Weeks-2 credits 6 Weeks and above-3 Credit Number of Students undergone internship are	Approved by BoS Members and Expert Members	BoS Chairman	Continuous	Submitted for the approval of Academic Council Meeting

	outcome plan for integrated courses, Project Based & System Based Courses. Internship for students (2nd, 3rd, & 4th Year)		3rd Year – 16 4th Year- 35 All members suggested that the Internship is mandatory to all students and to be fulfilled by AICTE norms. All members suggested having the NPTEL as mandatory to all students.				
7.	**Stake holders feedback and action taken** 1. Employer 2. Parent 3. Alumni 4. Student 5. Faculty	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert	The following suggestions are given by stakeholders • The Basic of Matrix and influence line diagram to be included in Module. to be included in the structural Analysis II • In Transportation Planning Intelligent transport system is included in fourth module, and Data Collection methodology is added instead of Data source analysis. Traffic flow modelling to be replaces with Flow theory • In Environmental Engineering Laboratory , Emerging technologies or analytical tools relevant to Environmental Engineering practices is added • In Smart Materials and Smart Structures, Exposure of current trends and materials available in the market is added. Based on the feedback, the curriculum and syllabi of R2022 are updated.	Taken into consideration	BoS Chairman	Continuous	It will be implemented from forthcoming semester -
8	Suggestion from IQAC		Students have the option to receive 3 credits either as a waiver or as additional credits upon successfully completing International Certificates. Additionally, students are required to present at least one paper in a symposium during their second year and at least one paper in a national/international conference in the third and final years of their course of study.				
8.	**Any other Matters** • Question Paper Reforms - Internal and End Semester Examination	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert)	All Members suggested that there is no need of Credit for the International Certificates. Dr.M.P.Muthuraj, One credit course, value added courses to be included in the curriculum of R2022 .	Same to be notified to autonomous section	BoS Chairman	Continuous	It will be implemented from forthcoming semester

	• Naan Mudhalvan – Value Added Course offered in ODD semester 2023-24 • Suggestions and permission to start new programmes in thrust areas • Introduction of Tamil courses and its assessment in R2022 as Extra credits. • NCC as Additional Credit\Waiver in R2022, R2018	Dr. Ibrahim Bathusha M (Subject Expert	All members insisted to add the course Basics of Civil and Mechanical Engineering or Fundamentals of Civil Engineering for the other departments (EEE, ECE, CSE, IT, FT, BT, TXT) curriculum since basic subject is one of the criteria for NEP 2020. All Members suggested to the Naan mudhalvan course like • Design of Steel Structures • Transportation Engineering • Tall Structures • Building Information Modelling The proposal to introduce the "Naan Mudhalvan" Value Added Course in the Odd Semester of 2023-24 was presented. Members deliberated on the course structure, objectives, and anticipated benefits for students. The introduction of Tamil courses and their assessment for Extra Credits in the R2022 curriculum was discussed. Members considered the cultural and linguistic significance of including Tamil courses and examined the proposed assessment framework and said to follow the guidelines of the institution.				

BoS Chairman

CHAIRMAN
Board of Studies
Faculty of Civil Engineering
K.S.Rangasamy College of Technology
TIRUCHENGODE 637 215

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Minutes of the Board of Studies Meeting

Department of Mechatronics Engineering

(UG-MECHATRONICS ENGINEERING & PG-INDUSTRIAL SAFETY ENGINEERING)

	BoS Meeting No	25		Date:	24/11/23	Venue:	Homi.J Bhabha Hall, Aditya Block
S. No.	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
1.	Curriculum and syllabi of V & VI Semester – R2022	Dr.S.Selvi (University Nominee)	R2022 (UG-MCT) – V & VI semester curriculum and syllabus is presented. • In 60 MC 602-Machine Design, in module-2,Design of Solid/Hollow shaft is to be added. In module-5,Pressure vessels and structures is to remove. PSG Data book must be added. • In 60 MC E13-Aircraft Mechatronics, modules may be reframed to basic level. • In 60 MC E16-Automation in Process Industries, ASAR topic is to added & PLC,SCADA is to removed. • In 60 MC E25-Optimiziation Techniques, Game theory may be add. • 60MC E26-Supply Chain Management course name is to change as Logistics & Supply Chain Management.	Curriculum and syllabi of Semester -V & VI is approved by Bos Member. In all the courses necessary corrections are carried out and the same was updated in the corresponding syllabi.	BoS Chairman	The same was modified in the R2022 Curriculum & Incorporated for the batch admitted in the year :2022-2023 onwards	

		Dr.M.Bharathiraja (Subject Expert)	• In 60 MC 601- Industrial Automation Controllers, Cascade Timers & shift registers may be added. • In 60MC6P2-Design thinking & Industrial Automation Laboratory,Cycle-1 & Cycle-2 is to be removed. • In 60 MC E11-Mobile robotics ,Mapping with program outcomes may be checked. • In 60 MC E35 -Product Design and Costing, Module -5 is to reframe. • 60 MC E36- Warehousing Automation course name is to changed as Warehouse Management.	As per the members inputs, the same is append in the syllabi.	BoS Chairman	The same was incorporated in R2022 for the batch admitted in the year :2022-2023 onwards.	
		Dr.P.Ravichandran (Subject Expert)	• In 60 MC 501 - Microprocessor and Microcontrollers, under module-5,shaft Speed control may be added. • In 60 MC 5P1- Microprocessors and Microcontrollers Laboratory,8086 Processors is to be added. • In 60 MC E12-Electric Vehicle, Battery Management System is to added. • In 60 MC E21-Agricultural Robotics and Automation, Robot Components & Layout has to be included. Also Module-5 may be revised. • In 60 MC E31- Robots and Systems in Smart Manufacturing, Case studies is to removed in module-5.	All the suggestion are carried out and it is updated	BoS Chairman	The same was incorporated in R2022 for the batch admitted in the year :2022-2023 onwards.	

2.	Revision in the Syllabi of I, II & IV Semester - R 2022	Dr.S.Selvi (University Nominee)	Discussions made on Syllabi of I, II & IV semester and there is no changes.	-	-		
3.	Minor and Honor degree course curriculum and syllabi in R2022 and R2018	Dr.S.Selvi (University Nominee)	Our MCT Department offers Honors Degree – **Robotics and Automation** 50 MC H01 – Medical Robotics 50 MC H02 - AI for Robotics 50 MC H03 - Robot Kinematics and Dynamics 50 MC H04 - Applied and Industrial Robotics 50 MC H05 - Robotic Programming 50 MC H06 - Sensors and Machine Vision Systems The curriculum and syllabi was discussed and the same was approved by Bos Experts	• For the Honors degree students with greater than 7.5 CGPA may allowed to enroll the same. • At the same time. No Standing Arrears.	BoS Chairman	The same was incorporated in the year :2023-2024 onwards.	
4.	List of open elective courses and value-added courses	• 50 MC L12 -Digital Transformation in Manufacturing & 50 MC L13 -Introduction to Occupational Health are the courses planned to offer as an open elective courses in even Semester (AY:2023-24) • In AY:2023 -24 (Even Semester)value-added course planned to offer is Autodesk Fusion 360. the above courses was approved by BoS experts.					
5.	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)	I. Total No. of credits for the UG programme In R2022 total number of Credits is 163 II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations Presented by BoS Chairman and Same was approved by BoS experts III. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & cross cutting issues. Presented by BoS Chairman, R 2022 Curriculum and syllabi shall meet the requirements as per the guidelines of AICTE IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students – R 2022 Curriculum & syllabi was framed by incorporating all the above V. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories Presented by BoS Chairman and Same was approved by BoS experts VI. New courses offered – around 25 new courses is presented by BoS Chairman and Same was approved by BoS experts. In R 2022(PG-ISE) I to IV Semester there is no changes					
6.	Discussion on Choice Based Credit System	I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (ODD Semester) and planned to offer in Even Semester of 2023-24- Based on the students interest as well as in line with their course pertaining to study, UG & PG students may enroll the SWAYAM / NPTEL / MOOC courses. II. One credit course - Planned to offer course (Even Semester) on topic "Digital Twin Technology"and MOU was Signed with PRAYA LABS, Tiruvanamalai. III. Skill based courses offered in 2023-24(ODD semester) and planned to offer 2023-24(Even Semester)- MATLAB & LabVIEW was planned to offer IV Internship details of students (2^{nd}, 3^{rd} & 4^{th} Year) In 3^{rd} year-24 Students & 4^{th} Year -39students were completed the internship					

7.	Stake holders feedback and action taken	(1) G.Anand CFD Engineer- Fisker Electric In 60 MC E15 Design of Experiments – all the modules are essential and make the students excel in DOE (2) Kalaiyarasu Krishnamoorthi Team Manager Bosch Global Software Technologies Private Limited, Bengaluru. In 60 MC 601 – Industrial Automation Controllers – in fifth Module, PLC Maintenance and case studies may be included The above Stake holders suggestion was incorporated in the syllabi and the same was approved by BoS experts
8.	Suggestions from IQAC	3 Credits can be offered to students as waiver or additional credits upon completion of International Certificates Students shall present at least one paper in symposium in second year and at least one paper in national/international conference during third year and final year course of study
9.	Any other matters	Value Added Course offered in ODD semester 2023-24 is to be followed as per Anna University guideline. Introduction of Tamil courses and its assessment in R2022 as Extra Credits, NCC as additional Credit \Waiver in R2022 & R2018 are discussed with BoS experts and the same was approved.

1/12/23.

CHAIRMAN
Board Of Studies/
Mechatronics Engineering

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215

(An Autonomous Institution, Affiliatedto Anna University, Chennai, Approved by AICTE, New Delhi)

AGENDAforBoSMeeting

2023 – 2024 (Odd SEMESTER)

Name of the Body	Board of Studies (BoS) Electronics and CommunicationEngineering - UG and PG Electronics Engineering (VLSI Design and Technology) - UG
Meeting No	25
Date & Time	18.11.2023&10.30AM
Venue	ECE meeting Hall + Microsoft Teams
Meeting link	https://teams.microsoft.com/l/meetup-join/19%3ameeting_Y2JjMTlhMzMtNzZmNy00MWNmLTg2MWUtOTFlNGNjZDkwOTQz%40thread.v2/0?context=%7b%22Tid%22%3a%22ca51afa4-43e6-4d01-9a9a-633374b0618e%22%2c%22Oid%22%3a%2254c6de95-e973-491b-bbf9-adba6f04324c%22%7d

The list of members attended the meeting is given in **Annexure - I.** The Agenda discussed is given below:

S.No.	ITEMS
1.	**Curriculum and syllabi of V and VI Semester R 2022 UG courses**
2.	**Revision in the Curriculum and syllabi of II semester R2022** **Revision in the Curriculum and syllabi of VIII Semester R 2018 of UG**
3.	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018**
4.	**List of open elective courses and value-added courses offered in 2023-24 (ODD Semester) and planned to offer in 2023-24 (Even semester)**
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022 (PG)** I. Total no. of credits for the UG and PG programme II. Preparation of curriculum from I to VIII Semester courses for R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and start-ups & entrepreneurship and cross cutting issues IV. Curriculum & syllabi should improve innovative, design & critical thinking skills andproblemsolving abilities of students V. Virtual Laboratories & Industry sponsored / Specific Laboratories VI. New courses offered
6.	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM/NPTEL/MOOC courses offered in 2023-24 (Odd semester) and planned to offer in Even semester of 2023-24 II. One credit courses offered in 2023-24 (Odd semester) and planned to offer by industry in Even semester of 2023-24. III. Skill based courses offered in 2023-24 (Odd semester) and planned to offer in Even semester of 2023-24. IV. International Certification completed in 2023-24 with credits V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. VI. Evaluation & course outcome plan for integrated courses, Project based & System Based Courses VII. Internship details of Students (2nd, 3rd & 4th Year)
7.	**Stake holders feedback and action taken**
8.	**Suggestion from IQAC**
9.	**Any other matters** Question Paper Reforms – Internal and End Semester Examination Naan Mudhalvan – Value added courses offered in odd semester of 2023 – 24 Suggestions and permission to start new programmes in thrust areas Introduction of Tamil courses and its assessment in R2022 as extra credits

Minutes of the Board of Studies Meeting
DepartmentofECE

	BoS Meeting No:25			Date: 18.11.2023		Venue:	ECE meeting Hall + Microsoft Teams platform
S.No.	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
The Program coordinator welcomed all the members for the meeting. The items listed in the Agenda are taken for discussion one by one. As per the feedback received from stake holders, the syllabus ofR2018 and V and VI semesters of R2022 are framed. The minutes of the meeting are as follows:							
1a.	**Curriculum and syllabi of V and VI Semester R 2022 of ECE**	Dr. Ashok Rao (Subject Expert Nominated byAcademic Council)	➢ Course name: Control System Engineering ➢ Module 2,3 and 4 may be combined into 2 modules. ➢ The concept of digital control and its implementation may be taught after control system analysis and state variable methods where transfer function in Z domain and simple P,PI and PID controller implementation may be looked at to improve practical implementation skills of the students. ➢ Suggested to remove Bodeplot part and introduce Discrete time analysis part.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	➢ Course name: VLSI and Chip Design ➢ Module one may be started from second order effects. ➢ The part in module 2 'examples of combinational logic circuit' may be replaced with Design of Combinational logic circuits. ➢ Suggested to include the	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-

			case studies in module 5 in ASIC design and then testing part may be given.				
		Dr.I.S.Akila (Nominated by University)	➢ Course name: Digital Signal Processing ➢ Suggested to remove the term'basic' in module 5.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University) Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.J.Christopher Clement ((Alumni, Nominated by Principal))	➢ Course Name: Microprocessors and Microcontrollers ➢ Title of the module 4 may be renamed with Case studies. ➢ Case studies may be given inline with module 4 in the handson part like traffic light controller using 8051. ➢ Module 4 title may be Peripheral interfacing. ➢ The concept on nVIDIA based boards may be mentioned in module 5.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr. Ashok Rao (Subject Expert Nominated byAcademic Council)	➢ Course Name: VLSI Laboratory ➢ Suggested to get help from MOSES project for VLSI chip design, testing and verification that may be of benefit for the students to get more job opportunities.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr.J.Christopher Clement (Alumni, Nominated by Principal)	➢ Course name: Communication and signal processing laboratory ➢ Suggested to use the tool GNU radio and Software Defined Radio for simple Digital Processing and communication experiments to experience	Suggestions are accepted and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-

		Dr. Ashok Rao (Subject Expert Nominated byAcademicCouncil) Rajesh Narayanan (Industry Expert, Nominated by Principal) Dr.J.Christopher Clement (Alumni, Nominated by Principal) All members	➢ Course name: Reverse Engineering lab ➢ Suggested to develop a drawing or layout of a device ➢ Explore EMI/EMC issues particularly for health products. ➢ Diagnostic and troubleshooting at check points. ➢ Condemned equipment may be given ❖ Suggested and accepted the name of the laboratory as Innovative Engineering Laboratory	Suggestions are accepted and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	➢ Course name: Embedded system Laboratory ➢ Rename the word modify LED in experiment 1.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	➢ Course name: Wearable Devices ➢ Suggested to reduce the content of course for 2 Lecture hours. ➢ Add practical exercises/ miniproject from the concept learnt using basic components.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	
		Dr. Ashok Rao (Subject Expert Nominated byAcademicCouncil)	➢ Suggested to add the course autonomous vehicles	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	
		Dr. Ashok Rao (Subject Expert Nominated byAcademicCouncil)	➢ Courses name: Consumer Electronics. ➢ Suggested to combine modules related to audio and telephone and add a	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	

		Dr.I.S.Akila (Nominated by University)	the real time applications. ➢ LABVIEW may be used along with MATLAB wherever possible.				
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	➢ Course Name: Embedded Systems ➢ Suggested to look at the module 2 and 3 as the concept of ARM CORTEX M3/M4 Microcontroller is replicating and reorganize the modules and give the title accordingly.	Changes are incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	➢ Course name: Digital Communication ➢ Suggested to have a book on Information theory and coding in the reference. ➢ Module 3 and 4 may be swapped. ➢ Rename the title of the module 1 as Pulse digital modulation techniques. ➢ Marray, PSK and QPSK may be added in module 3.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	
		Vineet Kumar Chandra (Industry Expert, Nominated by Principal) Dr. Ashok Rao (Subject Expert Nominated byAcademicCouncil)	➢ Course name: Mobile Communication and Networks ➢ The concept on 5G technology may be emphasized ➢ One module may be allocated for describing 5G Technology concepts related to architecture and its protocols	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-

			separate module for mobile phone.				
1b.	**Curriculum and syllabi of III and IV Semester R 2022 of Electronics Engineering (VLSI Design and Technology)**	Dr. Ashok Rao (Subject Expert Nominated byAcademicCouncil)	➢ Suggested to add the course Data structure and its laboratory in the curriculum and syllabus. ➢ Recommended to offer same courses related to semesters I to IV for the departments EE and ECE. ➢ Recommended to combine the lab courses such as Linear Integrated Circuits Laboratory and Electromagnetics Laboratory.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of III semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	➢ Course name: Analog and Digital Communication ➢ Module 3 title may be changed to analog and digital modulation. ➢ Suggested to remove OFDM. Instead, Digital modulation techniques can be improved. ➢ Suggested to reframe the syllabus with 2 modules from Analog communication and 3 modules from Digital communication.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of IV semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University) and Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	➢ Course name: Computer architecture and Microcontrollers ➢ Suggested to reframe the syllabus with 2 modules from computer architecture and 3 modules from microcontrollers	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of IV semester of R2022(UG)	-
2	i) **Revision in the curriculum and Syllabi of II to IV**	All BoS members	➢ All BoS accepted to add the course Internet of things.in	It is resolved to submit the same to	-	-	-

	Semester - R 2022 (UG) ii) **Revision in the Syllabi of VIII Semester - R 2018 (UG)**		the Elective II list of Regulation 2018. ➢ The course Analog Communication may be given with 2 lecture hours and 2 practical hours as more importance is needed for practical part of it.	the academic council for further approval			
3	**Minor and Honors degree courses in R2022 and R2018**	Dr.I.S.Akila (Nominated by University)	➢ Suggested to rename the title of the module one of the course Introduction to Internet of Things ➢ Recent cryptographic algorithms may be included in the course Introduction to Security of Cyber-Physical Systems and the RSA algorithm may be removed. The module Software defined networks does not correlate with the course name mentioned. So, course may be reframed.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of minor degree courses	-
		Dr.J.Christopher Clement ((Alumni, Nominated by Principal))	➢ The course Block chain may be included in the curriculum.	Changes will be incorporated and submitted to the academic councilfor further approval .	Chairman – BoS and Program Coordinator	Curriculum of R2022(UG)	-
		Dr. Ashok Rao (Subject Expert Nominated by Academic Council)	➢ It is observed that some colleges in Karnataka, the response for minors for mathematics course from 5th semester onwards is high. So, this may also be offered.	It is resolved to submit the suggestions to the academic council.	-	-	-
		Rajesh Narayanan (Industry Expert, Nominated by Principal) and Vineet Kumar Chandra (Industry Expert,	➢ The concept of RISC 5 may be taught when compared to ARM as lots of companies are migrating towards RISC 5 now a days.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of minor degree courses	-

		Nominated by Principal)					
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	➢ Suggested to reduce the content in module 4 of the course Introduction to Industry 4.0 and Industrial Internet of Things	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of minor degree courses	-
4.	**List of open elective courses and value-added courses offered in 2023-24 (Odd Semester) and planned to offer in 2023-24 (Even semester)**	All BoS members	➢ The list of open electives and value-added courses are listed by the BoS chairman and all BoS members accepted the same.	-	-	-	-

5a. Discussion on Curriculum of I to VIII Semester for R 2022 (UG - ECE)

I. Total No. of credits for the UG programme -162

II. Preparation of Curriculum of I to VIII Semester for R 2022 (UG) and syllabi for V andVI semester courses of R2022 and Recommendations
Curriculum of I to VIII Semester for R2022 (UG) and the syllabi of V and VI semestersarefinalized according to the suggestions given by BoS Members above andit is resolved Tosubmit the syllabus with above changes to Academic council for approval.

III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship.

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
30.8%(GATE courses)	90%(Core and open electives)+CCD	6.9%(Start up and Entrepreneurship course)

IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
17%(ALL CORE LABS)	37%(question paper based)	46% (Tutorial courses)

V. Virtual Laboratories & Industry sponsored / Specific Laboratories

Name of Course with Code	**Semester**	**Name of Institution / Open Source Tools**
50 EC 7P1 - Communication and Networks Laboratory	VII	http://vlabs.iitb.ac.in/vlabs-dev/labs_local/computer-networks/labs/explist.php
50 EC 5P1 -Digital Signal Processing Laboratory	V	http://vlabs.iitkgp.ernet.in/dsp/

- IoT laboratory supported by Enthu technology Solutions India Pvt Ltd
- Electronic Circuit Design laboratory supported by Tessolve Semiconductors Pvt.Ltd

VI. New courses offered

Course Name	
IoT Hardware	Industrial IoT and Industry 4.0
Foundation of Data Science	Remote Sensing

Human Assist Devices	Software Defined Networks
IoT Product Development	Computer Vision: Algorithms and Applications
Wireless Broad Band Networks	Body Area Networks
IoT Based System Design	Rocketry and Space Mechanics
4G/5G Communication Networks	Advanced Wireless Communication Techniques
Wireless Sensor Network Design	Biomedical Instrumentation
Innovative Engineering Laboratory	Brain ComputerInterface and Applications

5b. Discussion on proposed Curriculum of I to VIII Semester for R 2022 (UG)

Total No. of credits for B.E. Electronics Engineering(VLSI Design and Technology) – 162

S.No.	Category	Credits Per Semester								Total Credits	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	2	2	-	-	-	-	-	-	**04**	**2.50**
2.	BS	7	9	4	4	-	-	-	-	**24**	**14.80**
3.	ES	10	4	3	-	-	-	-	-	**17**	**10.50**
4.	PC	-	5	14	20	18	14	12	-	**83**	**51.23**
5.	PE	-	-	-	-	3	6	3	3	**15**	**9.25**
6.	OE	-	-	-	-	3	3	3	-	**9**	**5.55**
7.	CG	-	-	-	-	-	-	2	8	**10**	**6.17**
8.	MC	MC I	-	MC II	-	MC III	-	-	-	-	-
9.	AC	-	-	-	-	-	-	AC I	AC II	-	-
10.	GE	GE I	GE II		-	-	-	-	-	-	-
Total		**19**	**20**	**21**	**24**	**24**	**23**	**20**	**11**	**162**	**100**

Note: HS- Humanities and Social Sciences including Management Courses, BS- Basic Science Courses, ES-Engineering Science Courses, PE-Professional Core Courses, PE-Professional Elective Courses, GE- General Elective Courses, OE- Open Elective Courses, CG -Career Enhancement Courses, MC- Mandatory Courses

5c. Discussion on Curriculum of I to IV Semester for R2022(PG)

I. TotalNo.ofcreditsforthe PGprogramme – 72

II. Preparation of Curriculum of I to IV Semesterand syllabi for R 2022 (PG) and Recommendations
Curriculum and syllabus of I to IV Semester for R2022 (PG) arefinalized according to the suggestions given by BoS Members. It is resolved to submit the syllabus with above changes to Academic council for approval.

III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship.

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
47.22%	26.4%	25%

IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
34%	22%	44%

V. New courses offered

Course Code	Course Name	Semester
60 PVL 102	Research Methodology and IPR	I

60 PVL 103	Analog IC Design	I
60 PVL 106	Advanced Embedded Computing	I
60 PVL1P2	Analog IC Design Laboratory	I
60 PVL 201	Design for Verification using UVM	II
60 PVL 203	RF Circuit Design	II
60 PVL E15	Genetic algorithm for VLSI Design	II
60 PVL E16	Bio Signal Processing	II
60 PVL E31	DSP Structures for VLSI	III
60 PVL E32	Applied medical image processing	III
60 PVL E33	Data Science and Engineering	III
60 PVL E41	System Verilog	III
60 PVL E42	HDL for IC design	III
60 PVL E43	Deep learning	III
60 PVL E44	Adaptive Signal Processing	III

6. Discussion on Choice Based Credit System

I. Self-study courses planned to be offered inthe Even semester of 2023-24

- NPTEL courses are given as self-study courses and it is made mandatory for all students. Faculty mentors are available with students supporting them.
- It is mandatory that all students should do two NPTEL courses during the course of study. Students have to complete the NPTEL courses before 7th semester.
- Udemy/Coursera/Certification Coursesare given as self study courses.
- The elective course ARM Architecture and Programming is offered as self-studycourse for students with CGPA>= 9.

II. One credit courses offered in odd semester of 2023-24 odd semester and planned to offer by industry in Even semester of 2023-24

S.No.	Name the Course
Offered	
1	LoRA WAN Network Architecture
2	Advanced data acquisition and control - LabVIEW
3	MATLAB on ramp courses
Planned	
1	Advanced data acquisition and control - LabVIEW
2	MATLAB on ramp courses
3	VLSI with static timing analysis

III. Skill based courses offered in even semester of 2022-23 and planned to offer in odd semester of 2023-24.

- PCB Design
- C programming
- LabVIEW
- Embedded C

IV. International Certification completed in 2022-23 with credits

Students are encouraged to do the International Certificates such as coursera, udemy, Edx, mathworks, Guvi and so on. All BoS members appreciated the proposal of giving credits to the students for obtaining International Certificates. Theyalso felt that it would raise the standards of the students to meet the industry needs.

V. Roll out of laboratory classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.

Name of Laboratory with Code R2018	Semester	Contest

Analog and Digital electronics Laboratory	III	Open ended experiments are given which will enable the students to develop projects on their own. Students can choose any circuits/logic/ applications given in each experiment or bring circuits/logic/ applications of their choice suitable to the given experiment.
Linear Integrated Circuits and Electromagnetics Laboratory	IV	
Digital Signal Processing Laboratory	V	
CMOS Design Laboratory	V	
Analog and Digital Communication Laboratory	VI	
Embedded Systems Laboratory	VI	
Communication and Networks Laboratory	VII	
Electronic Design Project Laboratory	IV	Students have to design application circuits/systems using analog and digital electronic components. Circuits can be chosen from the given list of experiments but need not be confined to it.
Innovation Project Laboratory	VI	Students have to design application circuits/systems using Electronics and communication Domain. Applications can be chosen (any four) from the given list but need not be confined to it.

VI. Evaluation & course outcome plan for integrated courses, Project based & System Based Courses

The assessment pattern for integrated courses, project-basedcourses are presented by BoS chairman and all the members accepted the same.

VII. Internship for Students (2^{nd}, 3^{rd}& 4^{th} Year)

- Credits shall be given for students undergoing internship/doing projects in relevant industry and it is given below:

Duration of Training /Internship	Credits
2 Weeks	1
Weeks	2
6 Weeks and above	3

7. Stake holder's feedback and action taken

Name of the Stake Holder	Type of the stakeholder	Regulation	Course Name/General	Feedback / Suggestions	Action Taken
Mrs,K.Vanitha	Faculty	R2022	Data science	Course on Data science may be introduced.	A course on Foundations of data science is introduced in the elective I list in semester V
Dr.C.Rajasekaran		R2022	Microprocessors and Microcontrollers	Hands on experience may be introduced along with the theory course.	It is incorporated in semester V
Dr.S.Malarkhodi		R2022	Digital Image Processing	Hands on related to image Enhancement, segmentation and compression may be introduced.	It is incorporated in the syllabus in semester VI, Elective I list.
Elangovan.M Dell R&D centre, Bangalore	Industry/Employer	R2022	Microprocessors and Microcontrollers	Add more project related topics	It is incorporated in the syllabus in semester V
BabuRamki Intel, Bangalore		R2022	VLSI and Chip Design	➢ It would be good if we can add a small lab exercise that involves	It is incorporated an both the theory as well as laboratory.

				memory ➢ Chapter 1 - Advanced Technologies - In addition to FinFeT and TFET you can touch upon GAA and RibbonFET also.From a Device perspective, these are the latest technologies.	
Koventhan Ravi, Proprietor, Bassoon Technologies		R2022	Consumer Electronics	Add consumer IoT like smartwatches, smart glasses, trackers, and smart home technologies like voice- or text-controlled home appliances.	It is incorporated in the same course in semester V.
Karthikeyan Mohanraj 2011-2015 batch National Bank of Ras-AI-Kaimah,	Alumni	R2022	Machine Learning Techniques	➢ As part of the Ensemble method, stacking technique is recommended ➢ In Reinforcement learning since we touch topics about use cases on robotics, including Multi-Agent, Inverse and Transfer Learning reinforcement topics will add value.	It is incorporated in the syllabus in VI semester.
Malathi M 2018-22 batch VVDN Technologies, Pollachi.		R2022	Digital signal processing	➢ Digital signal processing may be included with some basics of LTI systems and application ofDSP in adaptive filter, weinerfilter . ➢ Lab syllabus may be included with virtual lab experience to enhance utilization ofonline resource.	It is incorporated in Semester V.
Guhan /III year	Students	R2022	Innovative	Welcomed the laboratory	It is implemented in VI

			EngineeringLaboratory	course as it is useful for the students to trouble shoot the circuits at check points.	semester and suggestions are submitted for further approval
Sabarika / IV year		R2022	General	➢ A course on python must be learnt by all the students and it can be made mandatory. ➢ Welcomed the integrated courses as it improves the students to learn more in a practical way.	It is implemented and submitted for further approval

All these suggestions were presented in BoS meeting and all members welcomed the suggestions and appreciated the changes incorporated.

The following suggestions are given by stakeholders based on the Department Advisory Board meeting(DAB)for R2022 which are incorporated and presented in BoS.

- Suggested to shift the Microprocessor and Embedded systems Laboratory to fifth semester and Communication and Signal Processing Laboratory to sixth semester in order to have continuation.
- Suggested to change the name of the Reverse Engineering Laboratory in the sixth semester as the laboratory course with same name is offered in the second semester.
- Student from IV Year ECE suggested that they want to work with more hands-on sessions rather than theory
- Recommended to conduct coding contest for all the departments for improving coding skills.

8. Suggestions from IQAC

- Laboratory experiments shall be conducted using Virtual Labs
- End Semester Laboratory Examination shall be conducted with the question papers from external Industry experts

9. Any other matters

Discussion on the following matters is done in the meeting and approval received from BoS members.

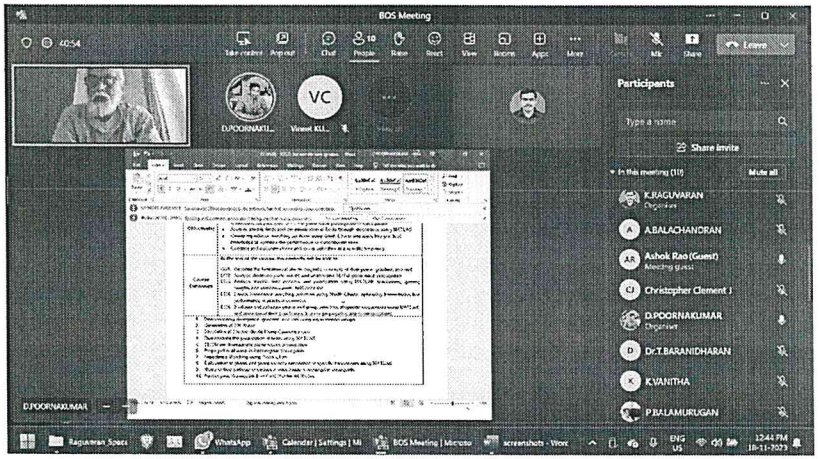
Members suggested that

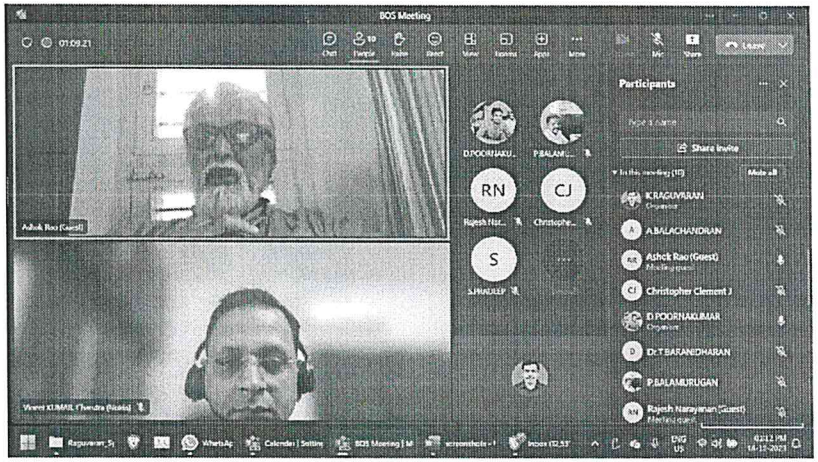
- the course on Memory for VLSI students is essential.
- one credit course on python may be added.
- Importance may be given for E-waste management and BoS chairman replied that the module on E-waste management is given in the course 'Environmental Studies and Climate Change'.
- Quality of the Internal assessment tests and End Semester Examination Question Papers has to be maintained considering university norms.
- Regarding the introduction of Tamil courses and its assessment in R2022 as extra credits, the mark split up for the continuous assessment test for the Tamil courses are displayed by the BoS chairman and all the BoS members accepted the same.

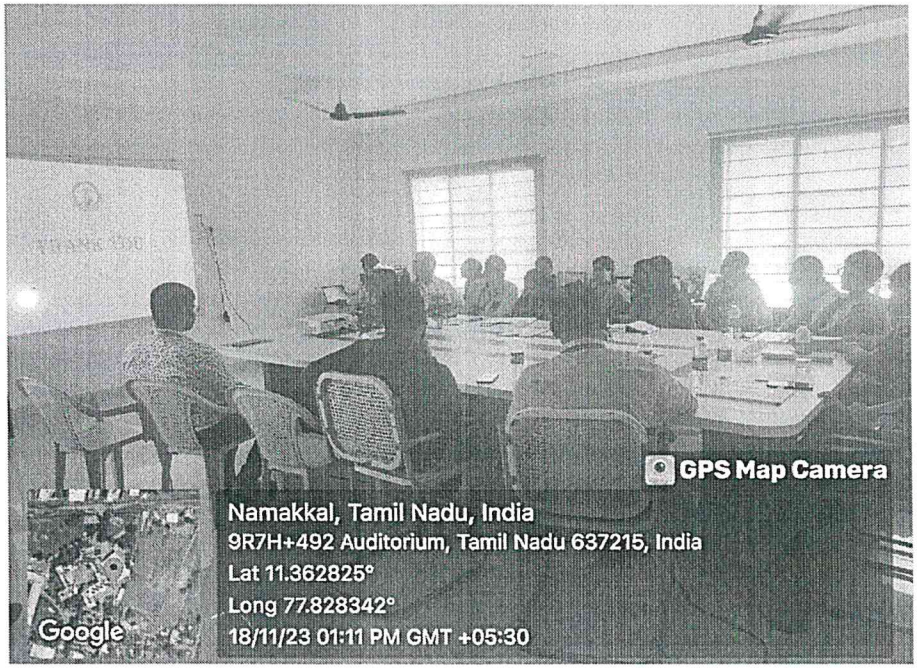
Chairman
BoS / Electronics
and Communication Engineering

CHAIRMAN BOARD OF STUDIES
Department of ECE
K.S.Rangasamy College of Technology,
Tiruchengode - 637 215.

Snapshot of BoS meeting







K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, NewDelhi)

Minutes of the Board of Studies Meeting
Department of Electrical and Electronics Engineering (UG & PG)

	BoS Meeting No: 25			Date: 25.11.2023		Venue: HoD Chamber , Dept of EEE	
S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	**Curriculum and syllabi of V and VI Semester UG & PG courses R2022**	Dr. A. S. Wincy Pon Annal University Nominee Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert	Curriculum and Syllabi were presented and the following changes to be made based on the suggestion given by **Suggestion given :** 1. 60EE501 – Generation Transmission and Distribution: Syllabus is heavy and the generation part may be removed and course name may be modified as Transmission and Distribution. 2. 60EE503 – Measurements and Instrumentation: Instruments standards and their protocols may be included 3. 60EE504 – Microprocessor, Microcontroller and Modern Controllers: Modern Controllers in the course name may be modified 4. 60EE601 – Power System Analysis and Stability: Topics on stability may be removed and course name can be modified accordingly. 5. 60EE603 – Power System Protection and Stability: Selection of circuit breakers based on applications to be included 6. 60EEE12 – Electric Vehicle Architecture: Standardization of Electrical vehicle is important and the may be included. 7. 60EEE13 – Utilization and Conservation of Electrical Energy: Role of energy audit may be added. 8. 60EEE16 – Network Analysis and Synthesis:Transient Analysis and Two port network module may be modified. 9. 60EEE21 – Solar Energy System:Design of solar cell may be	Updated the same in the syllabus	BoS Chairman	Submitted for the approval of Academic Council	-

			added in the syllabus 10. 60EE5P1 – Control and Virtual Instrumentation Laboratory: i. In addition with the existing syllabus content, conventional measuring experiments may also be included ii. Modeling part may be included. 11. 60EE5P2 – Special Applications Laboratory: Experiments may be fine tuned. 12. 60EE6P1 – Power Electronics and Drives Laboratory: Experiments 3,4,5 may be modified. 13. 60EE6P2 – Signal Processing and System Design Laboratory: Course name may be modified				
2.	**Revision in the Curriculum and Syllabi of II Semester R2022 UG & PG** **Revision in the Curriculum and Syllabi of VIII Semester R 2018 of UG**	Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert Dr. K. Udhayakumar Alumni	Based on the recommendation of DAB meeting, revision of the following course syllabus has been discussed. **1.** 60EE2P1 – Electric Circuit Laboratory – Listed experiments may be given as open ended and two port network parameters experiment may be added. **2.** 50EEE54 – Industrial Electrical System - Building automation, control and Energy Management may be added in Module III in the existing syllabus similarly, the course objectives and course outcomes will be modified accordingly. ii. Module III illumination system already given in the subject 50EEE45, so it may be replaced with the above. **3.** 60EE201 –Electric Circuit Analysis: - Tellegan's Theorem, Power and Power factor measurement by two watt meter method and filters and their types topics may be added in the course as it is available in GATE syllabus **4.** 60PPS204 –Restructured Power System: - In Module I & Module IV few advanced topics may be added since it is updated in NPTEL course for industry requirements	All members agreed the same and changes to be implemented with the approval of ACM	BoS Chairman	Submitted for the approval of Academic Council for implementation in R2022 & R2018	-

3.	**Minor and Honors degree courses curriculum and syllabi in R2022 and R2018**	Dr. A. S. Wincy Pon Annal University Nominee Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert	List of courses for VI semester R2018 Honors degree were decided as per the recommendations of the members. • Design of Motor and Power Converters for Electric Vehicle • Design of Electric Vehicle Charging System	All members agreed the same and changes to be implemented with the approval of ACM	BoS Chairman	Submitted for the approval of Academic Council for implementation in R2018	
4.	**List of open elective courses and value added courses offered in 2023 -24 (Odd Semester) and planned to offer in 2023-24 (Even Semester)**	Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert Dr. K. Udhayakumar Alumni	**Open Electives offered:** 1. 50EEL06 – Sensor Technology **Open Elective planned to offer:** **1.** 50EEL05 – Electric Vehicle **2.** 60EEL03-Graphical System Interface using LabVIEW **Value added courses offered:** 1. PCB Design and IoT **Vale added courses planned to offer:** 1. Embedded C 2. PCB Design using Altium **List of open electives and respective Syllabi were presented**	The same will be offered by the department for 2023-24	BoS Chairman and all faculty	Implemented in the academic Year 2023-2024 Odd Semester	
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV semester for R2022 (PG)** I. Total No. of credits for the UG programme II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship & cross cutting issues IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students. V. Virtual Laboratories & Industry sponsored / Specific Laboratories VI. New Courses offered	Dr N. P. Subramaniam Subject Expert Mr. R.Sakthimani Industry Expert Dr. K. Udhayakumar Alumni	Proposed Curriculum and Syllabi of R2022 were Presented. • Total No. of credits for the UG programme is 164 • Total No. of credits for the PG progrmme is 72 • Syllabus content were reviewed • Members appreciated that the curriculum framed meets out the syllabus for GATE examination and the courses are so planned to include either practical component in the theory course or to have separate practical course with optimum credits **The new courses offered are** • Heritage of Tamils / தமிழர் மரபு • Tamils and Technology / • தமிழரும் தொழில்நுட்பமும் • Fabrication and Reverse Engineering Laboratory • Engineering Economics and Financial	All members agreed for the same and changes are made as per suggestion	BoS Chairman	Submitted to Academic Council for approval	-

			Accounting • Microprocessors, Microcontrollers and Modern Controllers • Control &Virtual Instrumentation Laboratory • Special Applications Laboratory • Signal Processing and System Design Laboratory • Power System Protection and Switchgear • Electrical System Design Laboratory				
6.	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023 -24 (Odd Semester) and planned to offer in Even Semester of 2023-24 II. One credit courses offered in 2023 – 24 (Odd semester) and planned to offer by industry in 2023-24 (Even semester) III. Skill based courses offered in 2023 - 24 (Odd semester) and planned to offer 23-24 (Even semester) IV. International Certification completed in 2023-24 with credits V. Roll out of laboratories classes to make students to participate in Design Contests, Hachathon and Ideathon, etc. VI. Evaluation & course outcome plan for integrated courses. VII. Internship for Students (2nd , 3rd & 4th Year)	Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert Dr. K. Udhayakumar Alumni Dr. A. S. Wincy Pon Annal University Nominee	**NPTEL Courses offered in 2023 -24 Odd Semester:** 1. Introduction to Semiconductor Devices 2. Introduction to Industry 4.0 and Industrial Internet of Things 3. Solar Energy Engineering Technology **NPTEL Courses planned to offer:** 1. Cloud Computing 2. Introduction to Internet of Things 3. Sensors and Actuators **One credit course offered in 23-24 Odd semester:** 1. 50ECSE03 – Advanced Data Acquisition and Control **One credit course Planned to offer in 23-24 Even semester** 1. Matlab application to Electric Vehicles 2. VLSI Design with Static Timing Analysis **Life Skill Based courses offered:** 1. National Cadet Corps 2. Startups and Entrepreneurships Roll out of laboratories classes to make students to participate in Design contest is identified the following courses 1. Electric Circuit Analysis Laboratory 2. Electron Devices and Circuits 3. Linear and Digital Integrated Circuits Lab 4. Embedded Systems Assessment pattern for integrated courses were appreciated by the members **Internship for Students (2nd, 3rd & 4th**	Approved by all BoS Members	BoS Chairman	Submitted to Academic Council for approval	

			Year) • 2nd Year - 15 • 3rd Year – 32 • 4th Year - 47 All members suggested that the internship is mandatory to all students and to be satisfied by AICTE norms.				
7.	**Stake holders feedback and action taken** 1. Employer 2. Parent 3. Alumni 4. Student 5. Faculty		**1.** 60EEE22 - Design of Motor And Power Converters for Electric Vehicles: Feedback given by - S. Rakesh Kumar, Technical Manager, Engineering R & D Services HCL Technologies PvtLtd, Chennai. **Feedback** - In Unit-I, add introduction to EVs, Types & Parts, Applications, and advantages. Modelling should come before control, as model is required for controller design. **2.** 60EE6P2 - Digital Signal Processing Laboratory : Feedback given by - Kavin Ramanathan Vijayan, Engineer BGSW, Coimbatore **Feedback** - The inclusion of practical applications and hands-on projects is commendable. **3.** 60EE502- Control Systems : i. Feedback given by - Dr.B.Venkatesaperumal Professor ,Department of Electrical and Electronics Engineering, National Institute of Technology Karnataka Feedback - If possible, add introduction to nonlinear systems. **4.** 60EE603-Power System Protection and Switchgear: Feedback given by- K. Balachander, ASP/EEE, Karpagam University. Feedback - Include selection of circuit breaker and Lightning arresters **5.** 60EEE13 - Utilization and Conservation of Electrical Energy: Feedback given by - S Rajini, Manager, Bharat Heavy Electricals Limited (Bhel),Trichy, Feedback - It will be good, if Gas based Generation systems are added **6.** 60EEE15-Embedded System Design &	BoS members agreed for the same	BoS Chairman	It will be implemented from forthcoming semester	

			60EEE25-Embedded C Programming: Feedback given by – Govarthanan Thirumurugan Responsible for Body Electronics, Bosch Global Software Technologies Private Limited. Feedback - In Lab course, include the Auto Code Generation and National Instruments, Matlab based interface as well.				
8.	**Suggestions from IQAC**		Each laboratory course may include experiments using virtual lab				-
9.	**Any other matters** • Question Paper Reforms – Internal and End Semester Examination • Naan Mudhalvan – Value Added Course offered in ODD semester 2023-24 • Introduction of Tamil courses and its assessment in R2022 as Extra credits • NCC as additional Credit/Waiver in R2022, R2018		• 10% of the CAT questions may reflect GATE examination question paper				-
			• Credit may given to Naan Mudhalvan course and it may beconsidered as extra credit				
			• Introduction of Tamil courses are appreciated				

19/12/2025

Chairman
BoS / EEE

Chairman
Board of Studies
Department of Electrical and Electronics Engineering,
K.S.Rangasamy College of Technology,
Tiruchengode - 637 215. Namakkal-Dt.

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215
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Minutes of the Board of Studies Meeting
Department of Computer Science and Engineering

	BoS Meeting No: 25		Date: 02-12-2023, 09:30 A.M.			Venue:	IT Park
S.No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	Curriculum and syllabi of V & VI Semester R2022	Dr.B.Vinoth Kumar	• In Operating Systems course, suggested to include installation of OS instead of OS security	• Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	V semester of R2022	
		Dr.T.SenthilKumar	• Suggested to remove decidability and undecidable problems in Formal Language and Automata Theory Course	• Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	V semester of R2022	
2.	Revision in the Curriculum and syllabi of II Semester - R 2022	Mr. Praveen Ramalingam	• Suggested to include Java Script concepts in final module of Web Development course • Percentage of revision: 35%	• Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	R2022	
	Revision in the Curriculum and syllabi of R 2018	Ms. ManjariAnandan	• Suggested to include DevOps as open elective course to other department students	• DevOps is added as an open elective course and	BoS Chairman	R2018	

				submitted to Academic Council for approval			
3.	**Minor and Honors degree courses in R2022 and R2018**	All Members	• Minor and Honour degree courses on Full Stack Development is proposed and accepted by all members	Submitted to Academic Council for approval	BoS Chairman	R2022	
4.	**List of open elective courses and value-added courses offered in 2023-24 (Odd Semester) and planned to offer in2023-24 (Even semester)**	Open Elective Courses offered in 2023-24 Odd Semester • Java Programming (R2018) • Salesforce(R2018) • Jakarta Enterprise Edition (R2018) Value Added Courses offered in 2023-24 Odd Semester Mobile Application Development Open Elective Courses planned to be offered in 2023-24 Even Semester • Java Programming (R2022) • Advanced Java Programming (R2022) • Generative AI (R2022) • Linux and Shell Programming (R2018) • DevOps (R2018) • Salesforce (R2018) Value Added Courses planned to offer in 2023-24 Even Semester • Power BI • React JS • Angular • MERN STACK • Open AI • Flutter Application Developer • Microsoft Azure Fundamentals • Courses offered by INFOSYS - Springboard • Matlab Courses					
	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)	• Course code for Web Development is changed • To inculcate the habit of Learning by Doing/Activity Based Learning/Project Based Learning, the following changes are introduced • Hands-On practices are introduced in Software Engineering					

	I. Total No. of credits for the UG programme	164
	II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations	Curriculum of I to VIII Semester for R2022 (UG) and the syllabi of V and VI semester are finalized according to the suggestions given by BoS Members and it is resolved to submit the Syllabus with above changes to Academic council for approval.
	III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship	Yes, Curriculum and syllabi meet the requirements to pursue higher education & career guidance and startups & entrepreneurship by offering the following courses • Core Courses for GATE Preparation • Career Skill Development I, II, III, IV, & V • Start-ups and Entrepreneurship • Research Skill Development –I and II
	IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students	Yes, Curriculum & syllabi improves innovative, design & critical thinking skills and problem solving abilities of students • Innovative Design in all core labs • Questions are asked to improve Critical Thinking Skills in Tests and Tutorials • Problem solving abilities of students are improved by tutorials
	V. Virtual Laboratories & Industry sponsored / Specific Laboratories	Planned to use virtual laboratories for Data Science.
	VI. New Courses Offered	Generative AI is introduced in Elective I
	Discussion on Curriculum of I to IV Semester for R 2022(PG)	
	I. Total No. of credits for the PG programme	73
6.	**Discussion on Choice Based Credit System**	

	I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in Even semester of 2022-23 and planned to offer in Odd semester of 2023-24	NPTEL courses offered in Odd semester of 2023-24 1. Demystifying Networking 2. The Joy Of Computing Using Python 3. Ethical Hacking 4. Cyber Security and Privacy 5. Introduction To Industry 4.0 And Industrial Internet Of Things 6. Privacy And Security In Online Social Media NPTEL courses planned to offer in Even semester of 2023-24 1. Python for Data Science 2. Programming in Java 3. Programming, Algorithms and Data structures using Python 4. Introduction to Machine Learning – ML 5. Problem Solving Through Programming in C 6. Introduction to Artificial Intelligence
	II. One credit course offered in 2023-24 (Odd semester) and planned to offer by industry in 2023-24(Even semester)	One credit courses planned to offer by industry in Even Semester of 2023-24 • Oracle Cloud
	III. Skill based & Value-added courses offered in Odd semester of 2023-24 and planned to offer in Even semester of 2023-24	• Practical Component is introduced in few open elective and core elective courses. • Matlab courses will be offered as Value Added Courses
	IV. International Certification completed in 2023-24 with credits	Students are encouraged to do the International Certificates such as coursera, udemy, and so on. All BoS members appreciated the credits given to the students for obtaining International Certificates
	V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.	Mini project shall be given for laboratory courses to make students to participate in Design Contests, Hackathon and Ideathon, etc.

	VI. Evaluation & course outcome plan for integrated courses	In integrated courses, Practical component shall be evaluated as a lab component
	VII. Internship for Students (2nd , 3rd & 4th Year)	Students undergoing minimum 6-8 weeks of Internships in reputed industries for sharpening skill sets
7.	**Stake holders feedback and action taken**	Refer the Attachment
8.	**Suggestions from IQAC**	• 3 Credits can be offered to students as waiver or additional credits upon completion of International Certificates • Prize winners of national level/state level competitions such as Hackathon, India Skills, etc. shall be offered with 3 credits either as waiver or additional credits • One course from NPTEL shall be made mandatory for all UG programmes • In R2018, instead of attendance,5 marks shall be allotted to students based on the performance of periodical planned to be conducted every day • Students shall present at least one paper in symposium in second year and at least one paper in national/international conference during third year and final year course of study
9.	**Any other matters**	
	i) QP – Internal and End Semester Examination	The internal and external examiners list are presented by BoS Chairman and all the members accepted the same.
	ii) Suggestions and permission to start new programmes in thrust areas	NIL
	iii) Minor and Honours degree in Regulations 2022.	Full Stack Development

02/12/23

BoS Chairman

Dr.S.Madhavi

Dr.S.MADHAVI M.E.,Ph.D,
Professor and Head
Department of Computer Science and Engineering
K.S Rangasamy College of Technology
Tiruchengode

Department of Information Technology

Minutes of 25th Board of Studies (BoS) Meeting

The Meeting of Board of Studies (BoS) was held as given below:

Name of the Body	Board of Studies (BoS)
Meeting No	25
Date & Time	02.12.2023, 01.30 PM
Venue	Online Link: https://teams.microsoft.com/l/meetup-join/19%3acad374f6930846bd94078b4a480e67c9%40thread.tacv2/1701430902838?context=%7b%22Tid%22%3a%22ca51afa4-43e6-4d01-9a9a-633374b0618e%22%2c%22Oid%22%3a%220b66e574-0a73-4fa7-aef3-3a2b84a880f8%22%7d

The list of members attended the meeting is given in **Annexure - I.**

The 25th BoS Meeting was held on 02.12.2023, Saturday at 01.30 pm in the Hybrid mode (Microsoft Teams).

The following members were present:

S. No.	Name	Membership	Address
1.	Dr.R.Poonkuzhali	Chairman / BoS	KSRCT
2.	Dr.B.Vinoth Kumar	University Nominee	Professor, Department of Information Technology, PSG College of Technology, Peelamedu, Coimbatore – 641 004
3.	Dr.B.Surendiran	External Subject Experts	Assistant Professor, Department of Electronics and Communication Engineering, National Institute of Technology, Karaikal, Pondicherry.
4.	Dr. B.Kalaavathi	External Subject Experts	Professor Level PG1, School of Computer Science and Engineering, IoT Department, Vellore Institute of Technology, Vellore.
5.	Mr.Balaji Haridass	Industry Member	Head of AI Solutions Team, LG Soft India Private Limited, Bangalore.
6.	Mr.Y.Harishankar	Alumni Member	Data Architect, GE Vemova, Bengaluru.
7.	Dr.J.Nithya	Member	KSRCT
8.	Dr.V.R.Sadasivam	Member	KSRCT
9.	Dr.C.Rajan	Member	KSRCT
10.	Dr.M.Sangeetha	Member	KSRCT
11.	Dr.C.Nallusamy	Member	KSRCT
12.	Ms.V.P.Dhivya	Member	KSRCT
13.	Mr.M.Thilakraj	Member	KSRCT
14.	Ms.S.Geetha	Member	KSRCT
15.	Mr.K.Saravanan	Member	KSRCT
16.	Mr.R.Arunkumar	Member	KSRCT
17.	Mr.S.ArulMurugan	Member	KSRCT
18.	Mr.K.Senthilkumar	Member	KSRCT
19.	Mr.R.T.Dineshkumar	Member	KSRCT
20.	Mr.P.Dineshkumar	Member	KSRCT
21.	Ms.N.Sathiyapriya	Member	KSRCT
22.	Mr.V.Shiyam	Member	KSRCT
23.	Ms.S.Keerthana	Member	KSRCT
24.	Ms.K.Mahalakshmi	Member	KSRCT

AGENDA

S. No.	ITEMS
1	Curriculum and syllabi of V & VI Semester of UG courses R2022
2	Revision in the Curriculum and Syllabi of II semester R2022 UG. Revision in the Curriculum and Syllabi of VIII semester R2018 of UG
3	Minor and Honors degree courses in R2022 and R2018
4	List of open elective courses and value-added courses offered in 2023-24 (Odd Semester) and planned to offer in 2023-24 (Even semester)

5	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG) I. Total No. of credits for the UG programme II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & Entrepreneurship & cross cutting issues. IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students V. Virtual Laboratories & Industry sponsored courses / Specific Laboratories VI. New courses offered
6	Discussion on Choice Based Credit System I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in ODD semester of 2023-24 and planned to offer in Even semester of 2023-24 II. One credit course offered in 2023-24 (Odd semester) and planned to offer by industry in 2023-24(Even semester) III. Skill based courses offered in 2023-24(Odd semester)and planned to offer 2023-24(Even semester) IV. International Certification completed in 2023-24 with credits V. Roll out of laboratories classes to make students to participate in design Contests, Hackathon and Ideathon, etc. VI. Evaluation & course outcome plan for integrated courses VII. Internship details of students (2nd, 3rd, 4th Year)
7	Stake holders feedback and action taken
8	Suggestion from IQAC
9	Any other matters • Question Paper Reforms – Internal and End Semester Examination • Naan Mudhalvan - Value-added courses offered in ODD semester 2023-24 • Suggestions and permission to start new programmes in thrust areas • Introduction of Tamil courses and its assessment in R2022 as Extra credits • NCC as additional Credit / Waiver in R2022, R2018

The Chairman of Board of Studies (BoS) welcomed all the members for the meeting. Then, the items listed in the Agenda were taken for discussion one by one. The minutes of the meeting are as follows:

1. **Curriculum and syllabi of V & VI Semester – R 2022 (UG) and I to IV semester for R2022 (PG).**

BoS Meeting No:		**25**			**Date:**	**02.12.2023**	**Venue: IT 201**
S.No.	**Agenda**	**Name & Nominee**	**Course Code & Name**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**
1.	Curriculum and syllabi of V & VI Semester of UG and PG courses R2022	Dr. B.Kalaavathi Dr.B.Surendiran	60 IT 503 / Embedded Systems and IoT	• LORA / MQTT can be included in Embeded Systems and IoT Subjects by Academic Expert	• Protocols for IoT communication can be added	Faculty	Immediate
		Mr.Balaji Haridass Mr.Y.Harishankar	60 IT 5P1 / Operating Systems and Open Source Laboratory	•Simulator can be used as in TexM.com by Industry Expert	• Simulation experiments may be added	Faculty	Immediate
		Dr.B.Surendiran Dr.B.Vinoth Kumar	60 IT 5P2 / Computer Networks Laboratory	•Some of the Networking Lab experiments can be simulated using WireShark	• Simulation through Wireshark can be implemented	Faculty	Immediate

The Curriculum and Syllabi for 1st and IInd semester subjects of R2022 (UG&PG) is finalized and given in **Annexure II**. It is resolved to submit the syllabus and curriculum with above changes to Academic council for approval.

3. Minor and Honours degree courses in R2022 and R2018

- Minor degree in Web Development and Honor degree in Full Stack Development is offered for students after the completion of courses subscribed for R2018 and R2022.
- Total credits of 18 has to be obtained for completion of Minor Degree and Honor Degree.

4. List of open elective courses offered in the department in EVEN Semester of 2022-2023

S. No.	Course Code	Course Title
		R2018
1.	50 IT L02	Web Design
2.	50 IT L09	Full Stack Development
		R2022
3.	60 IT L01	Python Programming
4.	60 IT L02	Android App Development
5.	60 IT L03	Power BI

5. Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV semester for R2022 (PG)

The curriculum and Syllabi is finalized and is given in **Annexure III**. It is resolved to submit the Curriculum and syllabi with above changes to Academic council for approval.

I. Total No. of Credits = 163 (IT) (UG)

S. No.	Category	Credits Per Semester								Total Credits	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	2	2,3*	-	-	-	-	3	-	07	04.30
2.	BS	7	9	4	4	-	-	-	-	24	14.72
3.	ES	11	9	3	-	-	-	-	-	23	14.11
4.	PC	-	-	13	14	17	17	14	-	75	46.01
5.	PE	-	-	-	-	3	3	6	3	15	09.20
6.	OE	-	-	-	3	3	3	-	-	09	05.52
7.	CG	-	CSD I	CSD II	CSD III	CSD IV	CT	2	8	10	06.13
8.	MC	MC I	-	MC II	-	MC III	-	-	-	-	-
9.	AC	-	-	-	-	-	-	AC I	AC II	-	-
Total		20	20	20	21	23	23	25	11	163	100

Total No. of Credits = 72 (M. Tech (DS)) (PG)

S. No.	Category	Credits per Semester				Total Credits	Percentage %
		I	II	III	IV		
1.	RM	03	-	-	-	03	04.17
2.	PC	15	14	04	-	33	45.83
3.	PE	03	06	09	-	18	25.00
4.	CGC	-	-	06	12	18	25.00
5.	AC	AC I	AC II	-	-	-	-
Total		21	17	22	12	72	100

II. Contribution of Curriculum and syllabi: (R 2022 - UG)

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
40	55	05

IV. Contribution of Curriculum and syllabi:

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
48	10	42

Contribution of Curriculum and syllabi: (R 2022 - PG)

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
20	50	30

IV. Contribution of Curriculum and syllabi:

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
40	30	30

V. Virtual Laboratories

Virtual laboratories may be given in regular laboratories for students to learn the skill which are not part of the curriculum but required as professionals to take up new challenges.

S. No.	Name of Course with Code	Semester	Name of Institution / Open Source Tools	Web Link
1	50 EC 002 / Digital Logic Circuits	III	IIT ROORKEE	https://de-iitr.vlabs.ac.in/
2	50 IT 602 / Web Technology	VI	IIT DELHI	https://html-iitd.vlabs.ac.in/
3	50 IT 701 / Mobile Communication	VII	IIT KHARAGPUR	http://vlabs.iitkgp.ernet.in/fcmc/
4	50 IT 601 / Data Science	VI	IIT BOMBAY	http://vlabs.iitb.ac.in/vlabs-dev/labs/machine_learning/labs/exp7/simulation.php

VI. Industry Sponsored /Specific Laboratories

S. No.	Industry Supported Laboratory	Name of the Courses supported
1	Virtusa Laboratory	Software Testing, DOT NET
2	Aspire Systems Laboratory	Java, Full Stack Development
3	National Cyber Defence Resource Centre(NCDRC) Laboratory	Cryptography Network Security, Cyber Security
4	Augusta Hi-Tech Laboratory	Blockchain Technologies
5	Oracle Laboratory	Database Management System
6	Salesforce Laboratory	Customer Relationship Management (CRM)
7	Maximl Laboratory	Full Stack Development
8	Automation Anywhere University	Robotic Process Automation (RPA)
9	Infosys	Business Intelligence, Mobile Application Development

Changes in the syllabi of VI, and VIII Semester for R 2018 (UG).

The Curriculum and Syllabi for **VII and VIII Semester for R 2018 (UG)** is finalized and given in **Annexure II**. It is resolved to submit the syllabus and curriculum with above changes to Academic council for approval.

6. Discussion on Choice Based Credit System

I. Self - study courses offered by industry

NPTEL online courses offered as self-study courses

II. One credit courses planned to offer by industry in ODD & EVEN of 2023-2024

S.No.	Name of the Course	Semester	Name of the Industry
1	Kotlin Programming	IV,VI,VIII	Target Corporation India, Bengaluru
2	Apache Spark	VI,VIII	Yoktra automations Pvt. Ltd., Coimbatore.

III. SWAYAM/ NPTEL online courses

S. No	Name the Courses	Credits
	Programming	
1	Embedded systems design	3
2	Introduction to Internet of Things	
3	Block chain and its applications	
4	Object oriented system development using UML, Java and Patterns	
5	Foundations of Cyber Physical systems	
6	An Introduction to Artificial Intelligence	
7	Ethical Hacking	
8	Privacy and Security in Online Social Media	

IV. Assessment pattern for project based Open Elective / Few Electives

- As per Regulation assessment were conducted for open elective and electives

V. Skill Based & Value Added Courses – 2023-2024

S.No.	Course Name	Credit	Semester
1	Angular Developer	1	V
2	React Developer	1	V
3	Agile Software Development using Kanban	1	VII

VI. International Certificates

Maximum of 2 Credits may be awarded to the student who gets certified by the international certificate provider.

Credits can be awarded based on the nature of course and certificate provider

S.No	Name of International Certificates
1	ISTQB- International Software Testing Qualifications Board
2	OCJP (Oracle Certified Java Programmer)
3	ASP .NET

VII. Rollout of Laboratory

S.No.	Name of Laboratory with Code	Semester	Contest (Design / Hackathon / Ideathon, etc.)
1	60 CS 0P1/ C Programming Laboratory	I	Codeathon
2	60 IT 0P1 / Python Programming Laboratory	II	Codeathon
3	60 CS 0P3 / Data Structures Laboratory	III	Codeathon
4	60 CS 0P4 / Java Programming Laboratory	III	Codeathon

VIII. Evaluation & Course Outcome Plan for Integrated Courses

Category of Courses	Continuous Assessment	Model Exam	Assignment / Tutorial / Practical Examination	Two Quizzes (Computer based MCQ type)	Activity	End Semester
Theory with Laboratory	**20(T) + 10(P)**	**10 marks**	**4 marks**	**2 marks**	**4 marks**	**50 marks**

IX. Credit for Industrial Training Internship [ODD 2023-24]

S.No.	Dept.	Year	Internship
1	IT(183)	IV	TOTAL : 85 Kaar Technologies Chatting Birds Air Calibre systems Dream work Digital Solution Cluster Data Pvt Ltd Aspire Systems Fcoos, CISCO MAAC Technologies
2		III	TOTAL : 80 TechVolt Software Private Limited AJ Tech Research Lab Blue IT Solutions Futurik Technologies Reach Technologies Avenstra Global Solutions
3		II	TOTAL : 18 Microsoft – Future Ready Talent AICTE – MATLAB CISCO Networking Academy

7. Stakeholders feedback and action taken

S.No	Name of the Stakeholder	Type of the Stakeholder	Feedback / Suggestions	Action Taken
1.	1. Preetha S (2016 – 2020) 2. Bharanitharan T (2018-2022) 3. Dharani P (2018-2022) 4. Prakash Kumar (2018-2022) 5. Shanthoshkumar R (2016 – 20)	**Alumni**	• Suggested to include mini projects, activity as assignments for theory oriented courses and group projects may be given to programming related subjects. • Suggested to include hardware laboratory component in curriculum.	• Students may be given activity and mini project. This aided them in developing problem-solving abilities. • Group projects, mini projects and assignments were assigned. • Curriculum were restructured with recent technology courses • Fundamentals of Data Science using Python. • Database Management Systems. • Computer Networks. • Included hardware laboratory component in Engineering Practices Lab.
2.	1. K.Yeswanth (2020 – 2024) 2. I.Blessing Sam (2020 – 2024) 3. Ramvignesh R (2021 – 2025) 4 R.Kavin (2021 – 2025) 5.M.Kesavan (2021 – 2025) 6.E.Ragavan (2022 – 2026) 7.Lakma Varshini R (2022- 2025)	**Student**	• Suggested to include Startups and Entrepreneurship, Deep Learning, Virtual Reality and Ethical Hacking courses.	• Curriculum was revised with recent technology courses. • Computational Data Analytics. • Analyzing, Visualizing and Applying Data Science with Python. • Included Startups and Entrepreneurship, Deep Learning, Virtual Reality and Ethical Hacking courses.
3.	1.Dr.V.R.Sadasivam 2. Dr.C.Nallusamy 3. Dr.M.Sangeetha	**Faculty (Department of IT)**	• Industry oriented tools and technologies can be included. • Suggested to include Theory of Computation and Compiler Design	• Industry oriented tools and technologies were included. • Included Compiler Design and in curriculum.

	4. Dr.J.Nithya			
	5. Ms.V.P.Dhivya			
	6. Ms.S.Geetha			
	7. M.K.C.Mohanraj			
	8.Mr.R.Arunkumar			
	9.Mr.K.Saravanan			
Employer				
4.	1.Sridhar N Virtusa	(2015-2019)	• Modern Tools may be included to meet industry needs. • Suggested to include Virtual Reality course. • Suggested to include recent technology courses in the curriculum. • Suggested to include communication related papers to differentiate from CSE curriculum. • Suggested to include recent technology courses in the curriculum.	• Planned to introduce the following Courses. ✓ Block chain. ✓ Data Encryption. • Included modern tools in machine learning, data mining and deep learning laboratory courses. • Introduced Computer Graphics and Virtual Reality course in R2022. • New Courses with open source tools can be offered to bridge the curriculum gap between the industry and the academic were introduced.
	2.Abishake R Wipro	(2015-2019)		
	3.Bhuvana Rangasamy Infosys Ltd	(2001-2005)		
	4.Ranjith Wipro	(2013-2017)		
	5.Dhinesh L Infosys	(2011-2015)		
	6.Arivazhagan Wipro	(2003-2007)		
	8.Devi S Infosys	(2009-2013)		

8. Suggestion from IQAC

- 3 Credits can be offered to students as waiver or additional credits upon completion of International Certificates
- Prize winners of national level/state level competitions such as Hackathon, India Skills, etc. shall be offered with 3 credits either as waiver or additional credits
- One course from NPTEL shall be made mandatory for all UG programmes
- In R2018, instead of attendance, 5 marks shall be allotted to students based on the performance of Activity pertaining to every course in the particular semester.
- Students shall present at least one paper in symposium in second year and at least one paper in national/ international conference during third year and final year course of study.

9. Any other matters

Regulations 2022

- Recommended to offer minor and honor degree courses.
- Conduct practical based experiments for some courses and enable online evaluation.
- Encourage Innovative ideas and create Idea Stores at the college level.
- Conduct internal level hackathons and codeathons to enable students to participate state level and national level hackathons.

Date: 05.07.2023

Chairman - BoS
Information Technology

KS Rangasamy College of Technology (Autonomous)

K.S. RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE - 637 215
(An Autonomous Institution, affiliated to Anna University, Chennai and Approved by AICTE, New Delhi)

Department of Artificial Intelligence and Data Science

Minutes of the 08th Board of Studies (BoS) Meeting

The Meeting of Board of Studies (BoS) was held as given below:

Name of the Body	Board of Studies (BoS)
Meeting No	08
Date & Time	02.12.2023, 01.30 PM
Venue	MCT Conference Hall,Adhitya Block,1st floor

The list of members attended the meeting is given in **Annexure - I.**

The 08th BoS Meeting was held on 02.12.2023, Saturday at 01.30 PM in the HoD Cabin.

The following members were present:

S. No.	Name	Membership	Address
1.	Dr. E. Mohanraj	Chairman	KSRCT
2.	Dr. B. Vinoth Kumar	External Member	Professor, Department of Information Technology, PSG College of Technology, Civil Aerodrome Post, Coimbatore – 641 004
3.	Dr. V. Thilagavathe	External Member	Associate Professor, Department of Computer Science and Engineering, Government College of Engineering, Erode – 638 316
4.	Dr. R. Sasikala	External Member	Associate Professor, School of Computing Science and Engineering, Vellore Institute of Technology, Vellore – 632 014
5.	Mr.A.Mohana Sundaram	External Member	Deputy Vice President, HDFC Digital, White Field, Bengaluru
6.	Dr. S. Sarumathi	Member	KSRCT
7.	Mr. N. Giridharan	Member	KSRCT
8.	Ms. S. Gayathri	Member	KSRCT
9.	Mr. S. Raja	Member	KSRCT
10.	Ms. I. Kalaimani	Member	KSRCT
11.	Mrs P. Indhumathi	Member	KSRCT
12.	Mrs. S. Sri Priya	Member	KSRCT

AGENDA

S.No.	ITEMS
1	Curriculum and syllabi of V & VI Semester of UG courses R2022.
2	Revision in the Curriculum and syllabi of II semester R2022.
3	Minor and Honor degree course curriculum and syllabi in R2018.
4	List of open elective courses and value-added courses offered in 2023-24 (ODD Semester) and planned to offer in 2023-24 (Even semester).
5	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG) I. Total No. of credits for the UG programme. II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & cross cutting issues. IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem-solving abilities of students V. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories VI. New courses offered

6	Discussion on Choice Based Credit System I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (ODD Semester) and planned to offer in Even Semester of 2023-24. II. One credit course offered in 2023-24 (ODD Semester) and planned to offer by industry in 2023-24 (Even Semester). III. Skill based courses offered in 2023-24(ODD semester) and planned to offer 2023-24(Even Semester). IV. International Certification completed in 2023-24 with credits. V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. VI. Evaluation & course outcome plan for integrated courses, Project based & System Based Courses I. Internship details of students (2nd , 3rd & 4th Year)
7	Stake holders feedback and action taken
8	Suggestions from IQAC
9	Any other matters • Question Paper Reforms - Internal and End Semester Examination • Naan Mudhalvan – Value Added Course offered in ODD semester 2023-24 • Suggestions and permission to start new programmes in thrust areas • Introduction of Tamil courses and its assessment in R2022 as Extra credits

The Chairman of the Board of Studies (BoS) welcome all the members to the meeting. Then, the items listed in the Agenda were taken for discussion one by one. The minutes of the meeting are as follows:

BoS Meeting No:	**08**	**Date:**	**02.12.2023**	**Venue:** MCT Conference Hall, Adhitya Block,1st floor

S.No.	Agenda	Name & Nominee	Course Code & Name	Discussions / Suggestions	Action to be Taken	Responsibility	Target
1	Curriculum and syllabi of V & VI Semester of UG course R2022	Dr. B. Vinoth Kumar	60 AD 501 – Data Communication and Networks	Suggested to include flow chart techniques, MAC, DES & RSA, SSL/TLS in 2nd and 5th module	Changes to be made in syllabi.	Module Coordinator	09.12.2023
2.		Mr.A.Mohana Sundaram	60 AD 502 – Operating Systems	Suggested to include Case Studies in 5th module.	Changes to be made in syllabi.	Module Coordinator	09.12.2023
3		Dr. R. Sasikala	60 AD 504 – Design Thinking	Suggested to include Case Studies in all modules.	Changes to be made in syllabi.	Module Coordinator	09.12.2023
4		Dr. V. Thilagavathe	60 AD 5P1 – Networking Lab	Suggested to change the list of experiments.	Changes to be made in syllabi.	Module Coordinator	09.12.2023
5		Dr. R. Sasikala	60 AD 5P2 – Machine Learning Lab	Suggested to include tools	Changes to be made in syllabi.	Module Coordinator	09.12.2023
6		Mr.A.Mohana Sundaram	60 AD E15 – Healthcare Analytics	Suggested to include Case Studies in 5th module.	Changes to be made in syllabi.	Module Coordinator	09.12.2023
7		Dr. R. Sasikala	60 AD 602 – Deep Learning	Suggested to include Activation functions in 5th Module	Changes to be made in syllabi.	Module Coordinator	09.12.2023
		Mr.A.Mohana Sundaram	60 AD 604 – Robotic Process Automation	Suggested to change the subject name as industrial robotics automation	Changes to be made in syllabi.	BoS chairman	09.12.2023
		Dr. R. Sasikala	60 AD 6P1 – Deep Learning Laboratory	Suggested to include mini project	Changes to be made in syllabi.	Module Coordinator	09.12.2023

		Dr. B. Vinoth Kumar	60 AD E22 – App Development	Suggested to include laboratory exercises	Changes to be made in syllabi.	BoS chairman	09.12.2023
		Dr. V. Thilagavathe	60 AD E25 – Software Testing & Automation	Suggested to include testing tools	Changes to be made in syllabi.	Module Coordinator	09.12.2023
8	List of Value-Added Courses proposed in R2022	Mr.A.Mohana Sundaram	-	Suggested to conduct Value added course like Full Stack Web Development	Planned to conduct similar value-added course	HoD	-
9		Dr. R. Sasikala	-	Suggested to conduct one credit course for data exploration and visualization subject.	Planned to conduct similar one credit course	HoD	-

1. **Curriculum and syllabi of V & VI Semester of UG Courses – R2022**

SEMESTER V

S. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
Theory								
1.	60 AD 501	Data Communication and Networks	PC	3	3	0	0	3
2.	60 AD 502	Operating Systems	PC	5	3	0	2	4
3.	60 AD 503	Machine Learning	PC	3	3	0	0	3
4.	60 AD 504	Design Thinking	PC	4	2	2	0	3
5.	60 AD E1*	Elective I	PE	3	3	0	0	3
6.	60 AD L**	Open Elective II	OE	3	3	0	0	3
7.	60 MY 003	Start-ups and Entrepreneurship	MC	2	2	0	0	0
Practicals								
8.	60 AD 5P1	Networking Laboratory	PC	4	0	0	4	2
9.	60 AD 5P2	Machine Learning Laboratory	PC	4	0	0	4	2
10.	60 CG 0P4	Career Skill Development IV	CG	2	0	0	2	1*
11.	60 CG 0P6	Internship	CG	0	0	0	0	1/2/3*
Total				**33**	**19**	**2**	**12**	**23**

SEMESTER VI

S.No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
THEORY								
1.	60 AD 601	Augmented Reality and Virtual Reality	PC	5	3	0	2	4
2.	60 AD 602	Deep Learning	PC	3	3	0	0	3
3.	60 AD 603	Data Exploration and Visualization	PC	3	3	0	0	3
4.	60 AD 604	Compiler Design	PC	4	2	0	2	3
5.	60 AD E2*	Elective II	PE	3	3	0	0	3
6.	60 AD L**	Open Elective III	OE	3	3	0	0	3
PRACTICALS								
7.	60 AD 6P1	Deep Learning Laboratory	PC	4	0	0	4	2
8.	60 AD 6P2	Data Visualization Laboratory	PC	4	0	0	4	2
9.	60 AD 6P3	Mini Project	PC	2	0	0	2	1
10.	60 CG 0P5	Comprehensive Test	CG	2	0	2	0	1*
11.	60 CG 0P6	Internship	CG	0	0	0	0	1/2/3*
Total				**33**	**17**	**2**	**14**	**23**

2. **Revision in the Curriculum and syllabi of II semester R2022.**

Courses moved from second semester to first semester:

1. Basic Electrical and Electronics Engineering
2. Heritage of Tamils

Courses moved from third semester to second semester:

1. Tamils and Technology

3. **HONORS DEGREE IN DATA SCIENCE**

CURRICULUM & SYLLABI

S.no	Course Code	Course title	Category	Periods per week			Contact Periods	C
				L	T	P		
1.	50 AD H01	Data and Information Security	PE	3	0	0	3	3
2.	50 AD H02	Data Storage and Management in cloud	PE	3	0	0	3	3
3.	50 AD H03	Web Mining	PE	3	0	0	3	3
4.	50 AD H04	Image and Video Analytics	PE	3	0	0	3	3
5.	50 AD H05	Health Care Analytics	PE	3	0	0	3	3
6.	50 AD H06	Text and Speech Analysis	PE	3	0	0	3	3
Total				**18**	**0**	**0**	**18**	**18**

4. **List of open elective courses offered in the department in ODD Semester of 2023-2024**

S.No.	Course Code	Course Title
1.	50 AD L05	Robotic Process Automation

List of open elective courses offered in the department in EVEN Semester of 2023-2024

S.No.	Course Code	Course Title
1.	60 AD L01	Data Analytics
2.	60 AD L02	Machine Learning using R
3.	60 AD L03	Python for Data Science

List of value-added courses offered in 2023-24 ODD Semester

1. Full Stack Web Development

List of value-added courses planned to offer in 2023-24 Even Semester

1. Generative AI
2. Robotic Process Automation
3. Full Stack Web Development
4. Mobile Application Development
5. Stress Management

5. Discussion on Curriculum of I to VIII Semester for R 2022 (UG)

I. Total No. of credits for the UG Programme - 163

III. Contribution of Curriculum and syllabi: (R 2022 - UG)

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
40	45	15

IV. Contribution of Curriculum and syllabi:

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
30	18	52

V. Virtual Laboratories

Virtual laboratories may be given in regular laboratories for students to learn the skill which are not part of the curriculum but required as professionals to take up new challenges.

S. No.	Course Code & Title	Semester	Virtual Laboratory
1.	60 CS 0P2 / Data Structures Laboratory	III	https://ds1-iiith.vlabs.ac.in/data-structures-1 https://ds2-iiith.vlabs.ac.in/data-structures-2/
2.	60 AD 5P2 / Machine Learning Laboratory	V	https://vlabs.iitb.ac.in/vlabs-dev/labs/machine_learning

VI. New Courses proposed in R 2022

- Virtual Reality and Augmented Reality
- Computer Vision
- Cyber Security
- Robotics Process Automation

- Natural Language Processing
- Swift Coding and App Development
- Android Application Development
- Game Development
- Blockchain Technologies
- Cognitive Science
- Exploratory Data Analysis
- Recommender Systems

6. Discussion of Choice based Credit System

I. SWAYAM / NPTEL / MOOC Course (2023-2024) ODD Sem - Completed

S.No	Name the Course	Credits
1	Python for Data Science	2
2	Introduction to Internet of Things	3
3	Computer Architecture	3

SWAYAM / NPTEL / MOOC Course (2023-2024) EVEN Sem – Planned

S.No	Name the Course	Credits
1	Joy of Computing using Python	3
2	Data Science for Engineers	2
3	Foundations of Cyber Physical Systems	3

II. **One Credit Course planned to Offer by Industry (2023-24) – Even Semester**

S. No.	Name of the Course	Semester	Name of the Industry
1	Data Security and Privacy	VI	Hackup Technologies, Coimbatore

III. Skill based courses planned to offer in 2023-24 (Even Semester)

S. No.	Name of the Course	Semester
1.	Robotic Process Automation	VI
2.	Unity Game Engine for Virtual Reality	VI

IV.Recognizing International Certificate

- Maximum of 3 Credits may be awarded to the student who gets certified by the international certificate provider.
- Credits can be awarded based on the nature of course and certificate provider

S. No	International Certificates
1	ISTQB - International Software Testing Qualifications Board
2	Oracle Certification
3	Microsoft Certification
4	UiPath Certification

Online Certification Completed (2023-24) Odd Semester

S. No.	Platform	No. of Students Completed
1	Google Garage	2
2	Udemy	9
3	Google analytics academy	3
4	Great Learning	2
5	TCS iON Career edge	1
6	CYBRARY	5

V. Rolling out of Laboratory

Name of Laboratory	Semester	Contest (Design / Hackathon / Ideathon, etc.)
C Programming Laboratory	I	Codeathon
Python Programming Laboratory	II	Hackathon
Data Structures Laboratory	III	Codeathon
Java Programming Laboratory	III	Hackathon

VI. Evaluation & Course Outcome Plan for Integrated Courses

Theory Courses with Laboratory Component:

(Internal Assessment: 50 Marks + End Semester examination: 50 Marks)

a. Theory with Laboratory Courses:

Items	Theory Component						Laboratory Component				Total	Internal	End Sem, (Theory and Lab)
Mode of Assessment	CA Test	Assignment	Quiz	Practice Test	Model (Theory)	Activity	Observation	Model Exam 1 (Lab)	Model Exam 2 (Lab)	Case study Field Survey, Mini Project, Hackathon etc.,	100** Marks	50 Marks	50 Marks
Number of Assessment	2	2	2	5	1	4 Marks	-	2		1			
Marks	60 Marks	50 Marks	20 Marks	25 Marks	100 Marks		100 Marks	100 Marks	100 Marks	50 Marks			
Weightage	14	2	1	5	7		10	15	15	10			
Theory with Lab	Total	2 CA Test Marks = 2 x 14 = 28 2 Assignment Marks = 2 x 2 = 04 2 Quiz Marks = 2 x 1 = 02 5 Practice Test = 5 x 1 = 05 Model Exam Marks = 07 Activity Marks = 04						Observation Marks = 10 Model Exam 1 (After 50% Syllabus Coverage) = 15 Model Exam 2 (After 50% Syllabus Coverage) = 15 Mini Project, Case study, Field Survey, etc., = 10						
	Total Internal Marks for Theory = 50						Total Internal Marks for Lab = 50						

Assessment pattern for Project Based Courses

Project based courses assessed by the given model

S.No.	Name the Course - R2022	Credits
1	Robotic Process Automation	3
2.	Web Technology	3

- Continuous Assessment
  - Quiz
  - Mini Project
- Semester Exam
  - Project Review

VII. Industrial Training / Internship

S.No	Year	Company Name
1	IV	TOTAL : 35 • Techvolt Software Pvt. Ltd • PG Softwares • Aadi Foundations • Muvireck Technologies • Earthy origins • Statics.Pro • Red Mind Technologies • EIPP Solutions • Adhoc Softwares

2	III	TOTAL : 47 • Marcello Tech • Oasis Infobyte • Insource Technologies • Idea Tech • Accent Techno Soft • Pofy Technologies • Tech Forge • Prenetics • Techvolt Software
3	II	TOTAL : 1 • Statix.pro

7. Feedback from Stakeholders for R2022

- Recommended to include latest tools and technologies to enrich the technical skills of students
- The members were suggested to offer skill based value-added courses to meet the industry needs
- Recommended to offer Project based learning courses

8. Suggestions from IQAC

- 3 Credits can be offered to students as waivers or additional credits can be offered after occurring international certification course
- In R2018, five marks will be allotted to students, based on the performance of the periodical test instead of attendance.

9. Any Other Matter

➢ Question Paper Pattern for Internal and End Semester Examination

Internal

10 Short Answers (each- 2 marks), 4 Descriptive type (each - 10 marks)

Model & End Semester Examination

10 Short Answer (each- 2 marks), 4 Descriptive type (each - 15 marks) and 1 Compulsory question (20 marks)

➢ Naan Mudhalvan Courses

- Introduction to Cyber Security
- Fundamentals of Blockchain

➢ Introduction of Tamil courses and its assessment Patterns

- Heritage of Tamils / தமிழர் மரபு
- Tamils and Technology / தமிழரும் தொழில்நுட்பமும்

Date: 02.12.2023

Chairman – BoS

Artificial Intelligence and Data Science

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Computer Science and Business Systems

	BoS Meeting No:08			Date:02.12.2023		Venue: CSE Department
S.No.	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**
1.	**Curriculum and syllabi of V & VI Semester of R2022.**	Dr.B.Vinoth Kumar/AU Nominee M.Saravanan/Meritorious Alumni Dr.T.SenthilKumar/Senior Academic Expert				
	60 CB E11/ Python Full Stack	Dr.B.Vinoth Kumar Dr.T.SenthilKumar Mr.M.Saravanan	➢ Suggested to include the Basic of Python in Unit-1	Necessary updates are carried out in the syllabus	BoS Chairman	Submit to Academic Council for further approval
	60 CB E14/ Swift Coding and App Development	Dr.B.Vinoth Kumar Dr.T.SenthilKumar	➢ Suggested to include Go language or give it as value added course.	Necessary updates are carried out in the syllabus	BoS Chairman	Submit to Academic Council for further approval
	60 CB E15/ Conversational Systems	Dr.T.SenthilKumar	➢ Suggested to include Chatbot, NLP based projects.	Necessary updates are carried out in the syllabus	BoS Chairman	Submit to Academic Council for further approval
	60 CB 602/ Usability Design of Software Applications	Dr.T.SenthilKumar	➢ Suggested to include Sketch tool in addition with Figma tool	Necessary updates are carried out in the syllabus	BoS Chairman	Submit to Academic Council for further approval
	60 CB 601/ Machine Learning	Dr.B.Vinoth Kumar Dr.T.SenthilKumar	➢ Suggested Reference book as Text book ➢ Recommended to combine 3rd unit and 4th unit. ➢ 4th unit can include Bagging and Boosting.	Necessary updates are carried out in the syllabus	BoS Chairman	Submit to Academic Council for further approval
	Curriculum and syllabi of VIII Semester of	Dr.B.Vinoth Kumar/AU Nominee Mr.M.Saravanan/Meritorious Alumni				

	R2018.	Dr.T.SenthilKumar/Senior Academic Experts				
	50 CB E53/ IT Project Management		• Technical architecture can be included.	Necessary updates are carried out in the syllabus	BoS Chairman	Submit to Academic Council for further approval
2.	**Revision in the Curriculum and syllabi of II semester R2022.** **Revision in the syllabi of VI semester in R 2018.**	Dr.B.Vinoth Kumar Dr.T.SenthilKumar	Theory and Practical Components are separated as individual courses as like the following **R 2022:** 61 CB 202 – Object Oriented Programming 61 CB 2P1 - Object Oriented Programming Lab **R2018:** 51 CB 602 – Compiler Design 51 CB 6P1 – Compiler Design Lab **R 2022:** 61 CB 202 – Object Oriented Programming- Recommended to include Java Technologies for Applications as the last module	Necessary updates are carried out in the curriculum and syllabus	BoS Chairman	Submit to Academic Council for further approval
3.	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018.**	Nil				
4.	**List of open elective courses and value-added courses offered in 2023-24 (ODD Semester) and planned to offer in 2023-24 (EVEN semester)**	Open Elective(Odd Semester) – 50 CB L06 – Automation Testing Tools Open Elective(Even Semester) - 50 CB L07 – Business Analytics Value-added Courses (Odd Semester) – 1. UI/UX Design 2. Business Analytics 3. MERN Stack Value-added Courses (Even Semester) – 1. Full Stack Web Development 2. Software Testing **The members of BoS approved to offer the value added courses. These courses are forwarded to Academic council for further approval.**				

5. Discussion on Curriculum of I to VIII Semester for R 2022 (UG)

I. Total No. of credits for the UG programme - 164

II. Preparation of syllabi for I to VIII semester subjects R2022 and Recommendations

- Presented the I to VIII semester Curriculum and Syllabi and it gets approved.

III. Curriculum and syllabi shall meet the Requirements to pursue higher education & Career guidance and startups & entrepreneurship & cross cutting issues

-Yes, Curriculum and syllabi meet the requirements to pursue higher education & career guidance and start-ups & entrepreneurship by offering the following courses

- Career Competency Development I, II, III, IV, & V
- Start-ups and Entrepreneurship
- Research Methodology –I and II

IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students

- Yes, Curriculum & syllabi improves innovative, design & critical thinking skills and problem solving abilities of students

V. Virtual Laboratories & Industry sponsored / Specific Laboratories

- Planned to use virtual laboratories for Data Structures, Software Engineering.
- Planned to introduce following core and new elective courses

Core:

- MERN Stack
- C# and .NET Programming
- Cloud Application Development
- Data Science
- Software Testing and Automation

VI. Additional courses offered

- **Electives:**

- Python Full Stack
- MEAN Stack
- Android Application Development
- Swift Coding and App Development
- Conversational Systems
- Game Development
- Cryptocurrency and Blockchain Technologies
- Cyber Security
- Computer Vision
- Robotics Process Automation
- Cognitive Science
- Exploratory Data Analysis

- Recommender Systems
- Neural Networks and Deep Learning
- Natural Language Processing
- Virtual and Augmented Reality

6. **Discussion on Choice Based Credit System**

I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (Odd semester) and planned to offer in Even semester of 2023-24

- Self-study courses(NPTEL,MOOC) (2023-2024, Odd Semester)
  - Programming in Java
  - Data Structures and Algorithms using Java
- Self-study courses (NPTEL,MOOC) proposed (2023-2024, Even Semester)
  - Introduction to Database Systems
  - Business Intelligence and Analytics
  - Python for Data Science

II. One credit course offered in 2023-24 (Odd semester) and planned to offer by industry in 2023-24(Even semester)

- **One credit course offered in 2023-24 (Odd semester)**
  - UI/UX Design
- **One Credit Course planned to offer (2023-24 Even Semester)**
  - Scripting Languages
  - UI/UX Design

III. Skill based courses offered in 2023-24(Odd semester) and planned to offer 2023-24(Even semester)

- Skill based Courses offered in 2023-24(Odd semester) – Robotics Process Automation
- Skill based Courses planned to offer 2023-24(Even semester) - Full Stack

IV. International Certification completed in 2023-24 with credits

- 3 Credits offered as mandatory for R2018 & R2022 Regulation students

V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.

- Computer Programming Laboratory - Codeathon
- Data Structures Laboratory - Codeathon
- Design Thinking - Designathon
- Machine Learning Laboratory - Hackathon
- Usability Design of Software Applications Lab – Designathon

VI. Evaluation & course outcome plan for integrated courses

- In integrated courses,
  Practical component shall be evaluated as part of Assignment 3 to prepare the students for industry ready

VII. Internship details of the students (2nd , 3rd & 4th Year)

- Students undergoing 6/8 weeks of training /doing projects in industry / academic institutions of repute shall be given 3 credits and one elective course in 7 th or 8 th semester shall be waived.

7. **Stake holders feedback and action taken**

S.No.	Name of Stake Holder	Action Taken	Course Name (Changes are introduced)
1.	Dr.B.Vinoth Kumar/AU Nominee M.Saravanan/Meritorious Alumni Dr.T.SenthilKumar/Senior Academic Experts	➢ Suggested to include industry demand technologies in core courses itself. ➢ Projects are recommended rather than tutorials. ➢ Recommended integrated and project-based courses for more practical experience.	Tutorials are provided only problem-oriented Subjects. Subjects which need more practical exposure are offered through project-based mode.
2.	Dr.B.Vinoth Kumar	➢ To include Chatbot, NLP based projects. ➢ To include Sketch tool in addition with Figma tool ➢ Changed Reference book as Text book and to include Bagging and Boosting in unit-2.	R2022: Conversational Systems Usability Design of Software Applications Machine Learning
3.	Dr.T.SenthilKumar	R2022: ➢ To include the Basic of Python in Unit-1 ➢ To include Go language in Syllabus or give it as value added course. ➢ To include Java Technologies for Applications as the last module	R2022: Python Full Stack Swift Coding and App Development Object Oriented Programming
4.	M.Saravanan	R2018: ➢ Technical architecture can be included.	R2018: IT Project Management

8. Suggestions from IQAC

- 3 Credits can be offered to students as waivers or additional credits can be offered after occurring International certification course.
- In R2018, five marks will be allotted to students, based on the performance of the periodical test instead of attendance.

9. Any other matters

I. Introduction of Tamil courses and its assessment in R2022 as Extra Credits

- Heritage of Tamils / தமிழர் மரபு
- Tamils and Technology / தமிழரும் தொழில்நுட்பமும்

II. NCC as additional Credit \Waiver in R2022, R2018

- 3 Credits can be offered to students as additional credits.

14/12/23

Dr.K.Sakthivel
Chairman – BoS
Computer Science and Business Systems
(UG)

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Minutes of the Board of Studies Meeting

Department of Artificial Intelligence and Machine Learning

	BoS Meeting No: 04			Date:	02.12.23	Venue:	IT Park
S. No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	**Curriculum and syllabi of V & VI Semester – R2022**	Mr. Ramvignesh, Expert from Industry	In Machine Learning course Suggested to introduce time Series, MLOps and some case studies at the end of the course	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	V semester of R2022	
		Mr.D.Santhosh Expert from Industry	In Web Technology course suggested to include angular JS and React JS	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	V semester of R2022	
			In Data and Visual Analytics in AI course Suggested to include Tableau, Power BI	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VI semester of R2022	

			In Deep Learning course suggested to include tensorflow and keras	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VI semester of R2022	
2.	**Revision in the Syllabi of I, II & IV Semester - R 2022**		In Artificial Intelligence course, suggested to gain proficiency in implementing ML Algorithms and models. Develop problem-solving skills for real-world AI applications.	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VI semester of R2022	
3.	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018**	Nil					
4.	**List of open elective courses and value-added courses**	Nil					
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)**	To inculcate the habit of Learning by Doing/Activity Based Learning/Project Based Learning, the following changes are introduced Hands-On practices are introduced in Software Engineering					

	I. Total No. of credits for the UG programme	164
	II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations	Curriculum of I to VIII Semester for R2022 (UG) and the syllabi of V and VI semester are finalized according to the suggestions given by BoS Members and it is resolved to submit the Syllabus with above changes to Academic council for approval.
	III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship	Yes, Curriculum and syllabi meet the requirements to pursue higher education & career guidance and startups & entrepreneurship by offering the following courses • Core Courses for GATE Preparation • Career Skill Development I, II, III, IV, & V • Start-ups and Entrepreneurship • Research Skill Development –I and II
	IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students	Yes, Curriculum & syllabi improves innovative, design & critical thinking skills and problem solving abilities of students • Innovative Design in all core labs • Questions are asked to improve Critical Thinking Skills in Tests and Tutorials • Problem solving abilities of students are improved by tutorials
	V. Virtual Laboratories & Industry sponsored / Specific Laboratories	Planned to use virtual laboratories for Data Visual Anlytics in AI.

	VI. New Courses Offered	• Generative AI is introduced in Elective III
6.	**Discussion on Choice Based Credit System**	
	I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in Even semester of 2022-23 and planned to offer in Odd semester of 2023-24	NPTEL courses offered in Odd semester of 2023-24 1. Python for DataScience NPTEL courses planned to offer in Even semester of 2023-24 1. English Language for Competitive Exams 2. Education for Sustainable Development 3. Soft Skill Development 4. Introduction to Artificial Intelligence.
	II. One credit course offered in 2023-24 (Odd semester) and planned to offer by industry in 2023-24(Even semester)	• Nil
	III. Skill based & Value-added courses offered in Odd semester of 2023-24 and planned to offer in Even semester of 2023-24	• Practical Component is introduced in few open elective and core elective courses.

	IV. International Certification completed in 2023-24 with credits	Students are encouraged to do the International Certificates such as coursera, udemy, and so on. All BoS members appreciated the credits given to the students for obtaining International Certificates
	V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.	Mini project shall be given for laboratory courses to make students to participate in Design Contests, Hackathon and Ideathon, etc.
	VI. Evaluation & course outcome plan for integrated courses	In integrated courses, Practical component shall be evaluated as a lab component
	VII. Internship for Students (2nd , 3rd & 4th Year)	Students undergoing minimum 6-8 weeks of Internships in reputed industries for sharpening skill sets
7.	**Stakeholders feedback and action taken**	Refer the Attachment
8.	**Suggestions from IQAC**	• 3 Credits can be offered to students as waiver or additional credits upon completion of International Certificates • Prize winners of national level/state level competitions such as Hackathon, India Skills, etc. shall be offered with 3 credits either as waiver or additional credits • One course from NPTEL shall be made mandatory for all UG programmes

9.	**Any other matters**	
	i) QP – Internal and End Semester Examination	The internal and external examiners list are presented by BoS Chairman and all the members accepted the same.
	ii) Suggestions and permission to start new programmes in thrust areas	NIL
	iii) Minor and Honours degree in Regulations 2022.	NIL

12/12/23

BoS Chairman

Dr.S.Madhavi

Dr.S.MADHAVI M.E.,Ph.D,
Professor and Head
Department of Computer Science and Engineering
K.S Rangasamy College of Technology
Tiruchengode - 637215, Namakkal (DT),
Tamil Nadu.

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Minutes of the Board of Studies Meeting

The virtual Board of Studies meeting held on 21.11.2023 with the Greeting and welcome by the Board of Studies Chairman. The Chairman of BOS introduces the members to the forum.

The Chairman of Board of Studies explained the academic process followed in the Department which includes the completed Regulation, Teaching and Learning process, funded projects received and the major achievement of the Department.

The detailed discussion made by the Internal and external members as given in the agenda are given below:

Department of Biotechnology (UG & PG)

	BoS Meeting No	25		Date:	21.11.2023	Venue:	M.S.Swamynathan Seminar Hall
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	Curriculum and syllabi of I & II Semester – R2022	Dr.V.Pugalenthi	There is no changes suggested by the members for the R 2022 First and Second semester curriculum and syllabus.	Nil	Nil	Nil	Nil
2.	Revision in the Syllabi of I, II & IV Semester - R 2022	Dr. P. Selvamani	There is no changes suggested by the members for the R 2022 First and Second semester curriculum and syllabus.	Nil	Nil	Nil	Nil
3.	**Curriculum and syllabi of V & VI Semester of UG and PG courses R2022**						
	60 BT 501 Plant and Animal Biotechnology	Dr. P. Selvamani & Dr.V.Pugalenthi	1.Suggested to change or rename the title of fourth and fifth unit (eg: Animal cell culture).	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for	-

			2.Standard book and reference should be included. 3.To update/ recheck / reframe the COs and objectives . it should be specific with syllabus.			the further approval.	
	60 BT 502 Bioinformatics	Dr. P. Selvamani & Dr.V.Pugalenthi	1. To update/ recheck / reframe the COs and objectives . it should be specific with syllabus. 2. Standard book and reference should be included.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-
	60 BT 503 Bioprocess Technology	Dr. P. Selvamani & Dr.V.Pugalenthi	1.Suggested to change the chemical engineering, Bioprocess. 2.To update/ recheck / reframe the COs and objectives . it should be specific with syllabus 3.Standard book and reference should be included.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-
	60 BT 601 Biopharmaceutical Technology	Dr. P. Selvamani & Dr.V.Pugalenthi	1. To specify the topics related to case studies. 2. Try to include biobased case studies	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-
	60 BT 602 Chemical Reaction Engineering	Dr. P. Selvamani & Dr.V.Pugalenthi	3. To specify the topics related to case studies. 4. Try to include biobased case studies	Modified in the syllabus	Bos Chairman	It is submitted for the Academic	-

			5. Try to avoid the repetition or overlapping			Council for the further approval.	
	60 BT E11 Environmental Biotechnology	Dr. P. Selvamani & Dr.V.Pugalenthi	1.To include different types of monitoring such as soil, water and air.To include remediation, biological treatment of waste water and impact of nuclear reactor as a new unit.To update/ recheck / reframe the COs and objectives . it should be specific with syllabus 2.Standard book and reference should be included.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-
	60 BT E12 Biodiversity and its conservation	Dr. P. Selvamani & Dr.V.Pugalenthi	1.To update/ recheck / reframe the COs and objectives . it should be specific with syllabus 2.Standard book and reference should be included.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-
	60 BT E13 Environmental Hazards and Management	Dr. P. Selvamani & Dr.V.Pugalenthi	1. Refer anna university syllabus 2. To remove the term" type " from the title of unit 2 3. To update/ recheck / reframe the COs and objectives . it should be specific with syllabus 4. Standard book and reference should be included	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-

	60 BT E14 Food Biotechnology	Dr. P. Selvamani & Dr.V.Pugalenthi	1. Last unit should be renamed as Food quality and standard regulations. 2. Overall flow should be in such way that Introduction (principle)- process- product- quality control. 3. In unit 4 – focus on the food products developed from fermentation technology.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-
	60 BT E15 Fermentation Technology	Dr. P. Selvamani & Dr.V.Pugalenthi	1. Topics included in Bioprocess should be excluded. 2. Primary and secondary metabolites, microbial transformation can be included 3. To remove kinetics, introduction and optimization from first unit 4. In fifth unit, Industrial biotechnology mainly related to production can be included.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-
	60 BT E21 Cancer Biotechnology	Dr. P. Selvamani & Dr.V.Pugalenthi	1. To update/ recheck / reframe the COs and objectives.it should be specific with syllabus 2. Standard book and reference should be included.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	-

	60 PDB 204 Biopharmaceutical Technology	Dr. P. Selvamani & Dr.V.Pugalenthi	1.Standard book and reference should be included. 2. To update /Reframe Unique content. it should be specific with syllabus. 3. Content should be Industrial application.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	
	60 PDB 102 Advanced Microbiology	Dr. P. Selvamani & Dr.V.Pugalenthi	1.Standard book and reference should be included. 2. To update /Reframe Unique content. it should be specific with syllabus. 3. Content should be Industrial application.	Modified in the syllabus	Bos Chairman	It is submitted for the Academic Council for the further approval.	
4.	Minor and Honor degree course curriculum and syllabi in R2022 and R2018	**Honors Degree courses in R 2022 and R 2018**					
		Bioprocess Technology (R2022)	**Medical Biotechnology (R2022)**		**Agricultural Biotechnology (R2022)**	**Computational Biology (R2018\ R2022)**	
	1.	Fermentation Technology		Bioinstrumentation	Agricultural Microbiology	Programming for Bioinformatics applications	
	2.	Principles of Bioprocessing		Human Genetics	Organic Farming	Computer Aided Drug Designing	
	3.	Bioreactor Design and Scale up		Food Nutrition and Health	Crop Production Technology	Genomics and Proteomics	
	4.	Food Processing and Technology		Metabolic disorders	Management of Manure	Data Mining and Machine Learning for Bioinformatics	

					fertilizer and soil fertility		
	5.	Bioprocess Control and Instrumentation		Biomedical Engineering	Remote sensing and GIS application	Computational Systems Biology	
	6.	Bioreactor Considerations for Product Development		Molecular Therapeutics and Diagnostics	Green house technology and protected cultivation	Applied Statistics for Biology	
	7.	Bioprocess Modelling and Simulation		Natural Therapeutics	Agri Business Management and EDP	Next Generation sequencing & Data Analysis	
	8.	Bioprocess Economics and Plant Design		Forensic Science and Technology	Farming System and Sustainable Agriculture	Molecular Evolution and Phylogeny	
5.	List of open elective courses and value-added courses	**Dr. P. Selvamani**	➢ Production Technology of Agricultural and Food Processing Machinery (OE) ➢ Organic farming for sustainable agriculture(OE) (Even Semester) 1. Food Product-Development M/s. Moon Foods, Tirucehngode	It was approved by the previous meeting and the course was conducted	Bos Chairman	It is submitted for the Academic Council for the further approval	

			➢ Phytochemical and Natural Products- M/s. Armats Biotech (Value added Courses)				
6.	**Discussion on Curriculum of V and VI Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)**						
	Basic Science courses, Engineering Science courses, Humanities and Social Sciences including Management courses, Professional core courses	Dr. P. Selvamani & Dr.V.Pugalenthi	➢ The curriculum addresses all components to fulfil the programme requirements. ➢ Further it is advised by the members to merge Bioinformatics and Molecular Modelling and Drug Designing	-	Bos Chairman	It is submitted for the Academic Council for the further approval	-
	Professional Elective courses relevant to chosen specialization / branch Integrated electives	Dr. P. Selvamani & Dr.V.Pugalenthi	**List of integrated Courses** ➢ Nanobiotechnology ➢ Bioinstrumentation ➢ Toxicology ➢ Genomics and Proteomics ➢ Agricultural Biotechnology	Added in the Professional Elective courses	Bos Chairman	It is submitted for the Academic Council for the further approval	-
	Open Electives courses from other technical and /or emerging area courses	Dr. P. Selvamani & Dr.V.Pugalenthi	Suggestions received to add more skill enhancement courses in the curriculum		Bos Chairman	It is submitted for the Academic Council for the further approval	-

	Project work, seminar and internship in industry or elsewhere	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	Suggested that Internship may be evaluated by the Industrial persons. Based on the duration of internship the credit can be given between 1-3	Will be included	Bos Chairman	It is submitted for the Academic Council for the further approval	-
	Mandatory Courses	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	Accepted the list of mandatory courses recommended by the University and Institution.		Bos Chairman	It is submitted for the Academic Council for the further approval	-
7.	**Discussion on Choice Based Credit System**						
I	Self-study courses planned to offer in ODD and EVEN of 2023-24	--Nil--	--Nil--	--Nil--	--Nil--	--Nil--	--Nil--
II	One credit course planned to offer by industry in Even of 2023-24	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	Phytochemical and Natural Products offered by M/s. Armats Biotech Pvt., Ltd., Chennai	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-
III	SWAYAM/ NPTEL/ MOOC courses	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	Environmental Biotechnology Experimental Biotechnology	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-

IV	Assessment pattern for Open Elective / Few Electives	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	MCQ types of questions may suitable for online examinations	--Nil--	--Nil--	--Nil--	It submitted for the Academic Council for the further approval.
V	Mandatory courses like Human Values	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	➢ Environmental Science and Climate Changes ➢ Universal Human Values Start-ups and Entrepreneurship	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-
VI	Teaching-Learning Process-Experiential, Project Based & Activity Based Learning Flipped Class Room, Think-Pair-Share and other TLP	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	➢ Agreed the activity way of leaning methodology	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-
VII	Skill Based and Value Added courses planned to offer in ODD and EVEN of 2023-24	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	➢ Medical Coding and Pharmaco vigilance ➢ Phytochemical and Natural products ➢ Quality Control in Biotechnology ➢ Bio business Development ➢ Molecular Diagnostics	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-
VII	Credits shall be given to the students for obtaining International Certificates	Dr. P. Selvamani ,Dr.V.Pugalenthi & Ms. Shanmathi C	➢ Suggestions may obtained from the Academic Council meeting	--Nil--	--Nil--	--Nil--	-
VIII	Roll out of laboratories classes to	--Nil--	--Nil--	--Nil--	--Nil--	--Nil--	-

	make students to participate in Design Contests, Hackathon						
	Internship details of students (2nd , 3rd & 4th Year)	Details enclosed in Annexure I					
8.	Stake holders feedback and action taken	Ms.P.Priyavashini, (Alumni)	**60 BT 502 - Bioinformatics** Stakeholders recommended to remove the basic of Operating system and introduction on Linux environment in Bioinformatics. To include Microarray, Metabolic pathway, motif, and domain databases under Biological databases module.Add Python module instead of Perl language in the module 5 and to reframe the unit IV and reframe as per the GATE syllabus.To include Functional Annotation concept in the fourth module. **60 BT 602 - Chemical Reaction Engineering** Ms.P.Priyavashini, Alumni suggested to distribute text books to students for better				

		Ms.Karpagavalli Palpandi (Alumni) S.Naresh	understanding of the concepts. **60 BT E32 - Biophysics** ➢ Suggested to include advanced biophysics techniques such as Flow cytometry, FRET, FRAP, Mass spectrometry, X-ray crystallography ➢ Recommended to Include Biomechanics and Biomaterial which help to improve the industrial knowledge to students ➢ Feedback from academician - The current syllabus lacks the core concepts of biophysics.The course has to begin with the fundamentals of biophysics,followed by analytical instrumentation for characterisation of biomolecules, Biological Instrumentation and its applications in diagnostic medicine, biomaterials and its applications				

		(Industry) Dr.R.S. Sureshkumar (Academic)	**60 BT E25 - Biomedical Instrumentations** ➢ Suggested to add the topic on biosensors, how it worked, and its application in the medical field ➢ To include some topics for better understanding. i.e. Recent research study about biomechanics and its application ➢ Feedback from academician - In unit 2, Basic mechanisms and principles of biomedical ➢ sensors and biopotential amplifiers could be included.In unit 4, Biocompatibility testing of medical devices (ISO standard 10993) could be included. In unit 5, Hearing aids, Heart lung machine ECMO, Ventilators, Diathermy, Dialysers, Lithotripsy. Nano robots: ➢ surgery – 3D surgical techniques and orthopedic prostheses fixation could be included	Will be included	Bos Chairman	--Nil--	-

		Gaanappriya Mohan Yogesh (Alumni)	**60 BT 5P1 - Plant and Animal Biotechnology Laboratory** Gaanappriya Mohan Yogesh suggested to add cryopreservation of cell lines , thawing and reviving of cell lines in the laboratory and to add alamar Blue and one more basic viability assay along with Tryphan blue cell counting.				
		Gaanappriya Mohan Yogesh (Alumni)	**60 BT E11 - Environmental Biotechnology** In environmental biotechnology - Solidwaste management can be elaborated . Solid Waste Management Plan, Waste minimization technologies, Hazardous Waste Management, Sources & Classification, physicochemical properties, Hazardous Waste Control & Treatment. Can add some details about sustainable biotechnology - as it is the hot topic in many corporates where there is				

		Dr.K.P.Kannan (Academic) S.Naresh (Industry)	a division called ESG / Environmental monitoring. This can help increasethe employability quotient. Details on Electronic waste (E-waste): Sources and types and constituents of E-wastes and its environmental consequences can be added Impact of anthropogenic activities of environment: Land, Water, Air, Forest, Oceans and the coasts can be added Status and Scope of Biotechnology in environmental protection. Non-conventional energy sources. Various environmental standards: air, water and noise quality. Environment protection Act: environmental laws, policies, ethics. Environmental protection agencies. needs to be added to make the syllabus comprehensive.				
9.	Suggestions from IQAC	➢ 3 Credits can be offered to students as waiver or additional credits upon completion of International Certificates					

		➢ Students shall present at least one paper in symposium in second year and at least one paper in national/international conference during third year and final year course of study.
10.	Any other matters	➢ It is submitted to the Board for the reconsideration of the course Molecular Modelling and Drug Designing to retain in the Computational Biology Verticals in the regulation R2022. ➢ The BOS members suggested to include the following courses in Department elective. The list of courses include Technology Transfer, Entrepreneurship Development Programme, Biodefence, Molecular Medicine, Protein Bioinformatics, Molecular Basics of Pharmacology, Bioassay development, Translational Biotechnology, Industrial Training, Bioconjugate Technology, Biosensors, Computational Medicine, Epigenetics, Engineering principles for Biology, Synthetic Biology

HOD / BIOTECH
The Head
Department of Biotechnology

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)(Times New Roman 9)

Minutes of the Board of Studies Meeting

The Board of Studies meeting held on 22.11.2023 with the Greeting and welcome by the Board of Studies Chairman. The Chairman of BOS introduces the members to the forum.

The Chairman of Board of Studies explained the academic process followed in the Department which includes the completed Regulation, Teaching and Learning process, funded projects received and the major achievement of the Department.

The detailed discussion made by the Internal and external members as given in the agenda are given below:

Department of Food Technology (UG &PG)

	BoS Meeting No.: 25		**Date: 22.11.2023**	**Venue: M.S. Swaminathan Seminar Hall**			
S.No	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
1.	Curriculum and syllabi of I, II, III & IV Semester - R 2022	Dr.V.Pugalenthi	There is no changes suggested by the members for the R2022 First and Second semester curriculum and syllabus.	Nil	Nil	Nil	Nil
2.	Revision in the Syllabi of I, II, III & IV Semester - R 2022	Dr. J. Prakashmaran	There is no changes suggested by the members for the R2022 First and Second semester curriculum and syllabus.	Nil	Nil	Nil	Nil
3.	**Curriculum and Syllabi of V & VI Semester of UG and PG courses R2022**						
I.	60 FT 501 Dairy Technology	Mr. E. Dinesh (Kavincare) & Dr.V.Pugalenthi	1. Suggested to include adulteration and their test in module 2. 2. Suggested to add advanced technology for packaging instruments of dairy products	Mentioned suggestion were incorporated in syllabus.	Mr. S.Nithish Kumar	Completed	Updated in the syllabus

			in module 3 and also add quality aspects of milk products. 3. Standard book and reference should be included.				
II.	60 FT 502 Food Process Engineering	Dr. J. Prakashmaran & Dr.V.Pugalenthi	1. Suggested to include merits and demerits of cleaning the processing operation. 2. Suggested to check the reputation the syllabus 3. Standard book and reference should be included.	Mentioned suggestion were incorporated in syllabus.	Mr. P. Kalai Rajan	Completed	Updated in the syllabus
III.	60 FT 503 Process Control and Instrumentation	Mr. E. Dinesh (NAS Foods) & Dr.V.Pugalenthi	Suggested to revise as per food industry need or include the instrumentation specific to topic.	Mentioned suggestion were incorporated in syllabus.	Dr. J. Balachandar Mohan	Completed	Updated in the syllabus
IV.	60 FT 504 Heat and Mass Transfer	Dr. J. Prakashmaran & Dr.V.Pugalenthi	1. To specify the topics related to the syllabus. 2. Try to avoid the repetition or overlapping	Mentioned suggestion were incorporated in syllabus.	Dr. J. Balachandar Mohan	Completed	Updated in the syllabus
V.	60 FT 601 Baking and Confectionary Technology	Dr. J. Prakashmaran & Dr.V.Pugalenthi	1. Suggested to add sugar rheology and its properties 2. Standard book and reference should be included.	Mentioned suggestion were incorporated in syllabus.	Mr. P. Kalai Rajan	Completed	Updated in the syllabus
VI.	60 FT 602 Food Process plant layout and safety	Dr. J. Prakashmaran & Dr.V.Pugalenthi	Standard book and reference should be included.	Mentioned suggestion were incorporat	Dr. P. Shanmugam	Completed	Updated in the syllabus

				ed in syllabus.			
VII.	60 FT 603 Refrigeration and cold chain Management.	Dr. J. Prakashmaran & Dr.V.Pugalenthi	1.Avoid the repetition or overlapping. 2.Add examples or case studies related to food technology. 3.Standard book and reference should be included.	Mentioned suggestion were incorporated in syllabus.	Dr. P. Shanmugam	Completed	Updated in the syllabus
VIII.	60 FT 604 Food Process Equipment Design	Dr. J. Prakashmaran & Dr.V.Pugalenthi	Suggested to revise as per industry need and referred to keep in elective list.	Mentioned suggestion were incorporated in syllabus.	Dr. P. Shanmugam	Completed	Updated in the syllabus
IX.	60 FT 5P1 Dairy Technology Lab	Dr.V.Pugalenthi & Mr. E. Dinesh (Kavincare)	Suggested to add Milk products quality analysis techniques	Mentioned suggestion were incorporated in syllabus.	Mr. S.Nithish Kumar	Completed	Updated in the syllabus

4.		Minor and Honor degree course curriculum and syllabi in R2022 and R2018			
		Honors Degree courses in R 2022 and R 2018 (Vertical)			
		Food Biotechnology (R2022)	**Food Therapeutics (R2022)**	**Technology in Food Processing (R2022)**	**Next Generation Techniques in Food Sectors (R2022)**
	1.	Introduction to Food Biotechnology	Community Nutrition	Drying Technology	Food Material Science and Engineering
	2.	Food Analytics and Trouble shooting	Therapeutics Nutrition	Modern Separation Process	Instrumental Techniques in Food
	3.	Bioprocess Engineering	Traditional Foods	Technology of Fat and Oil	Experimental Design for Food Technologists

	4.	Down Stream Processing of Bio-products	Nutrigenomics	Cane Sugar Technology	Genomics and Proteomics
	5.	Food Allergy and Toxicology	Nutritional and Dietetics	Flavouring Technology	Food Informatics
	6.	Nano Biotechnology in Food Application	Food Additives, Nutraceuticals and Functional Foods	Beverage Technology	Space Food and Nutrition

S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
5.	List of open elective courses and value-added courses	Dr. J. Prakashmaran, & Dr.V.Pugalenthi	**Open Elective courses** 1. Food Commodities 2. Nutrition and Healthy life 3. Food Safety and Quality Control 4. Food Handling and Storage Engineering 5. Food Industry Waste Management **Value added Courses** • Meat Processing • Processing of Coffee	It was approved by the previous meeting and the course was conducted	Bos Chairman	It is submitted for the Academic Council for the further approval	
6.	**Discussion on Curriculum of V and VI Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)**						
	Basic Science courses, Engineering Science courses, Humanities and Social Sciences including Management courses, Professional core courses	Dr. J. Prakashmaran, Mr. E. Dinesh (Kavincare) & Dr.V.Pugalenthi	➢ The curriculum addresses all components to fulfil the programme requirements. ➢ Further it is advised by the members to introduce Tutorial component in Food Process Calculation courses instead of assignment.	-	Bos Chairman	It is submitted for the Academic Council for the further approval	-

	Professional Elective courses relevant to chosen specialization / branch Integrated electives	Dr. J. Prakashmaran & Dr.V.Pugalenthi	**List of integrated Courses** ➢ Food Allergy and Toxicology ➢ Nutritional and Dietetics ➢ Flavouring Technology ➢ Food Informatics ➢ Food laws – Indian and International	Added in the Professional Elective courses	Bos Chairman	It is submitted for the Academic Council for the further approval	-
	Open Electives courses from other technical and /or emerging area courses	Dr. J. Prakashmaran & Dr.V.Pugalenthi	Suggestions received to add more skill enhancement courses in the curriculum		Bos Chairman	It is submitted for the Academic Council for the further approval	-
	Project work, seminar and internship in industry or elsewhere	Dr. J. Prakashmaran & Dr.V.Pugalenthi	Suggested that Internship may be evaluated by the Industrial persons. Based on the duration of internship the credit can be given between 1-3	Will be included	Bos Chairman	It is submitted for the Academic Council for the further approval	-
	Mandatory Courses	Dr. J. Prakashmaran ,Dr.V.Pugalenthi & Mr. E. Dinesh (Kavincare)	Accepted the list of mandatory courses recommended by the University and Institution.		Bos Chairman	It is submitted for the Academic Council for the further approval	-
7.	**Discussionon Choice Based Credit System**						
I	Self-study courses planned to offer in ODD and EVEN of 2023-24	--Nil--	--Nil--	--Nil--	--Nil--	--Nil--	--Nil--

II	One credit course planned to offer by industry in Even of 2023-24	Dr. J. Prakashmaran, Dr.V.Pugalenthi & Mr. E. Dinesh (Kavincare)	1. Statistical Tools in Data Analysis for Food technology 2. Food Adulteration 3. Food Quality Assurance and Quality Control 4. Food Regulatory Affairs	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-
III	SWAYAM/ NPTEL/ MOOC courses	Dr. J. Prakashmaran & Dr.V.Pugalenthi	Chemical Process Utilities	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-
IV	Assessment pattern for Open Elective / Few Electives	Dr. J. Prakashmaran & Dr.V.Pugalenthi	MCQ types of questions may suitable for online examinations	--Nil--	--Nil--	--Nil--	It submitted for the Academic Council for the further approval.
V	Mandatory courses like Human Values	Dr. J. Prakashmaran & Dr.V.Pugalenthi	➢ Environmental Science and Climate Changes ➢ Universal Human Values Start-ups and Entrepreneurship	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-
VI	Teaching-Learning Process-Experiential, Project Based & Activity Based Learning Flipped Class Room, Think-Pair-Share and other TLP	Dr. J. Prakashmaran & Dr.V.Pugalenthi	➢ Agreed the activity way of leaning methodology	--Nil--	Bos Chairman	It is submitted for the Academic Council for the further approval	-

VII	Credits shall be given to the students for obtaining International Certificates	Dr. J. Prakashmaran ,Dr.V.Pugalenthi & Mr. E. Dinesh (Kavincare)	➢ Suggestions may obtained from the Academic Council meeting	--Nil--	--Nil--	--Nil--	-
VIII	Roll out of laboratories classes to make students to participate in Design Contests, Hackathon	--Nil--	--Nil--	--Nil--	--Nil--	--Nil--	-
	Internship details of students (2nd , 3rd & 4th Year)	Details enclosed in Annexure I					
8.	Stake holders Feedback and Action taken	E.Dineshkumar, Karthikeyan. K & Logesh S (Industry) Praveen.S (Alumini) Priyadharshini V (Industry)	**60 FT E35 - Food supply chain management** ➢ Stakeholders recommended to include some topics related to "Role of state, central & International Audits in Supply Chain Management" as it will be more helpful when the students comes out and work for various industries. ➢ Suggested to include the ware house technique to store the food products can be added a bit more for the understanding of the students. ➢ Recommended to Include differences of logistic management and supply chain management and the integration of logistics and supply chain ➢ Suggested to include strategic, tactical, and operational elementsensures that students gain a understanding of Food supply chain management. **60 FT E25 - Food Storage and cold chain Management** ➢ Recommended to include some topics related to general storage of food storage. ➢ Suggested to include FSSAI standards of food storage and control measures ➢ Suggested to include Need for the chain for chilled / frozen food item, various links of the chain, importance				

		Veerajeevan P (Alumini)	of shelflife, just-in-time deliveries; Temperature lints in vari countries Europe, US, Australia Chilling and freezing Chillinginjury, cook chilling systems, cold – shortening, PPP and TTT concept: Temperature mitring: Critical temperatures,Temperature-time indicators(TTT); Time-temperature correlation - The kinetic approach,effectivetemperature,Transportation regulation, Role of packaging materials in cold chain - MAS MAP CAS CAP: Thawingprocedures and indicators **60 FT E24 - Advance Processing and Data Technology in Food Business** ➢ Suggested to include programming languages used in data analytics, such as Python with Pandas an Numpy, Tableau, or Power BI, as well as their very own real-world applications. ➢ Recommended to Include Map reduce in Hadoop requires intensive pracϴcal sessions so that can be either altered with relevant topic or a lab can be planned along with the subject. ➢ Hadoop can be reduced based on the understanding of students from non-programming background. **60 FT E34 - Concepts on Experimental Design and Modellings** Recommended to Include Following Topics, ➢ Importance of Experiments in the Food Industry: Highlighting the essential role of experiments in recipe development, optimizing processing conditions, and ensuring product consistency in the food sector. ➢ ANOVA in Food Industry: Demonstrating how Analysis of Variance (ANOVA) can be used to compare different factors that impact the quality of food products, such as ingredient variations, cooking times, and storage conditions.				
		Karthik Karuppusamy (Industry) & Rajha V S (Industry) R Srinivasan (Alumini)					

			➢ Factorial Experiments in Food Industry: Exploring how factorial experiments are valuable for studying the interactions between multiple factors, such as ingredient combinations and cooking temperatures, and their effect on taste and quality in food products. ➢ Measures of Variability in Food Quality: Emphasizing the importance of understanding variability in food quality attributes to ensure consistent taste, texture, and appearance in food products. ➢ Response Surface Methodology in Food Product Optimization: Response Surface Methodology and its use in finding the ideal combination of ingredients and cooking conditions to achieve specific taste and texture in food products. ➢ Parameter Design for Quality Standards: Exploring how parameter design can be employed to fine-tune food production processes to meet specific quality standards in the food industry.	Will be included	Bos Chairman	--Nil--	-
9.	Suggestions from IQAC	➢ 3 Credits can be offered to students as waiver or additional credits upon completion of International Certificates ➢ Students shall present at least one paper in symposium in second year and at least one paper in national/international conference during third year and final year course of study.					
10.	Any Other matters	➢ Add some other alternate course related to food Technology like toxins food allergens etc. ➢ The BOS members suggested to include the following courses in Department elective. The list of courses include Food Allergy and Toxicology, Nutritional and Dietetics, Flavouring Technology, Food Informatics, Food laws – Indian and International					

Chairman - BOS

HOD / FT

K.S.Rangasamy College of Technology

(An Autonomous Institution, Affiliated to Anna University Chennai)

Tiruchengode – 637 215

25th d Board of Studies Meeting – Minutes

21st November 2023

Department of Textile Technology

Minutes of 25th Meeting of the Board of studies held on

21st November, 2023 at 1.30 pm in Dr Samynathan Seminar Hall, KSRCT Campus.

K.S.Rangasamy College of Technology

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K.S. RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE – 637 215

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Minutes of the Twenty Fifth BoS Meeting

The 25th BoS Meeting was held on 21.11.2023, Tuesday at 01.30 pm in. The following members were present:

S. No.	Name	Designation and Address
1.	Dr. G. Karthikeyan	Professor & HoD, KSRCT
2.	Dr. V. Pugalenthi	Associate Professor, Dept. of Biotechnology, University College of Engineering, Anna University, Tiruchirappalli.
3.	Dr. V. Ramesh Babu	Associate Professor & Head, Department of Textile Technology, Kumaraguru College of Technology, Coimbatore.
4.	Dr. P.Ganesan	Assistant Professor (Sr), PSG College of Technology, Coimbatore.
5.	Mr. P. Karnan	Regional Sales Manager, Rieter India Private Limited, Coimbatore.
6.	Mr. R. Ashok	Factory Manager, TRUE WORTH INC, Tirupur.
7.	Dr. M.B. Sampath	Professor, KSRCT
8.	Dr N.Sukumar	Professor, KSRCT
9.	Dr.K.Saravanan	Professor, KSRCT
10.	Dr M Bharani	Associate Professor, KSRCT
11.	Mr. G. Devanand	Associate Professor, KSRCT
12.	Ms.C.Premalatha	Associate Professor, KSRCT
13.	Dr. K. R. Nandagopal	Asst. Professor, KSRCT
14.	Mr. P. Maheswaran	Asst. Professor, KSRCT
15.	Mr. M. Arunkumar	Asst. Professor, KSRCT
16.	Mrs. D. Padmalatha	Asst. Professor, KSRCT
17.	Mr.A.S.Subburaayasaran	Asst. Professor, KSRCT
18.	Mr. N. Palanisamy	Parent – M/o Asmitha (IV Year Textile Tech)
19.	Mr. D.Harish	III year B.Tech. Txt, , KSRCT
20.	Ms. N. P Asmitha	IV year B.Tech. Txt, , KSRCT
21.	Mr.S.Sujeet	IV year B.Tech. Txt, , KSRCT

Dr G. Karthikeyan, Chairman BoS of Textile Technology, has Welcomes the BoS members, and presented the agenda and Presented about the Curriculum and Syllabi of UG R 2022 and PG R 2022.

S.No.	ITEMS
1	**Curriculum and syllabi of V & VI Semester of UG courses R2022.**
2	**Revision in the Curriculum and syllabi of II semester R2022.** **Revision in the Curriculum and syllabi of VIII Semester R 2018 of UG**
3	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018.**
4	**List of open elective courses and value-added courses offered in 2023-24 (ODD Semester) and planned to offer in2023-24 (Even semester)**
5	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)** I. Total No. of credits for the UG programme II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & cross cutting issues. IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students V. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories
6	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (ODD semester) and planned to offer in EVEN semester of 2023-24 II. One credit course offered in 2023-24 (ODD semester) and planned to offer by industry in 2023-24(Even semester) III. Skill based courses offered in 2023-24(ODD semester) and planned to offer 2023-24 (Even semester) IV. International Certification completed in 2023-24 with credits V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. VI. Evaluation & course outcome plan for integrated courses
7	**Stake holders feedback and action taken.**
8	**Suggestions from IQAC.**
9	**Any other matters** • Question Paper Reforms – Internal and End Semester Examination • Naan Mudhalvan – Value Added Course offered in ODD semester 2023-24 • Suggestions and permission to start new programmes in thrust areas

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215

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Minutes of the Board of Studies Meeting
Department of Textile Technology

S.No.	Agenda	Name & Nominee	Discussions /Suggestions	Action to be Taken	Responsibility	Target	Remarks
1	**Curriculum of UG (I – VIII Semester) of R2022**	Dr. V. Pugalenthi (University Nominee), Dr. V. Ramesh Babu (Subject Expert), Dr. P. Ganesan (Subject Expert), Mr. P.Karnan (Industry Expert), Mr. R. Ashok (Alumni)	✓ Subject Experts agreed with the credits as it is, all members reviewed the curriculum as presented and agreed.		BoS Chairman and Faculty members	2023 -24	-
2.	**Curriculum and syllabi of V & VI Semester of UG courses R2022**		✓ In general all the course objectives have to be verified as per the content of the course. ✓ In Textile core subjects to include latest developments in relevant area. ✓ Dr. Rameshbabu & Dr. Ganesan, subject expert suggested that the course proposed "Knitting Technology" to include Warp and Weft Knitting net structures, production calculation and latest development must addition. Also to include flat knitting and jacquard designs topic. ✓ In Textile Chemical Processing II subject Dr. Ganesan recommends to include new printing technology. Dr Ramesh Babu request to add new water standards. Both the 2 subject exports recommend addition of special finishing. ✓ In Technical Textile subjects both the subject experts strongly recommended to include 12 sectors of respective field.		BoS Chairman	Immediate	Suggestion submitted to Academic council

			✓ Dr. Pugalenthi recommends the Elective subjects must cover the industrial expectations and requirements. ✓ The industrial export and alumni members recommend addition garment lot inspection methodologies and requirement basic testing procedures with respect export lot passing in Textile and Apparel Quality evaluations subject. ✓ If possible students can be taken to textile mills for practical training. ✓ For lab courses number of experiments may be increase to 15, but suggested to conduct any ten experiments only. ✓ It was suggested to ensure in all the references latest edition have to use.				
3	**Curriculum and syllabi of PG courses R 2022**	Dr. V. Pugalenthi (University Nominee), Dr. V. Ramesh Babu (Subject Expert), Dr. P. Ganesan (Subject Expert), Mr. P.Karnan (Industry Expert), Mr. R. Ashok (Alumni)	✓ It was suggested to ensure in all the references latest edition have to use.		BoS Chairman	Immediate	Suggestion submitted to Academic council
4	**Curriculum and syllabi of VIII Semester R2018 of UG courses**	(All the above members)	NIL				

5. List of open elective courses suggested by the BoS Members for the Even Semester of 2023-24:

1. Fibre Science and Technology 2. Basics of Textile Technology 3. Introduction to Fashion Design 4. Industrial Textile

6. List of value-added courses suggested by the BoS Members for the ODD Semester of 2023-24:

1. Garment Merchandising
2. Associated Quality Professional (AQP)
3. Digital Printing
4. Visual Merchandising
5. Six Sigma
6. Surface Embellishment
7. Fashion Crafting
8. Information Technology Apparel & Fashion Industry
9. Computer Colour Matching
10. Hands on Training on Weaving Machines
11. Hands on Training on Sewing Machines

7. Discussion on Curriculum of I to VIII Semester of R 2018 (UG) and I to IV semester R2018 (PG) - Nil

8. Discussed on Curriculum of I to VIII Semester for R 2022 (UG) and the BoS Members suggested to prepare the syllabus for Preparation of syllabi for V and VI semester subjects as per the stake holders feedback.

9. It was discussed that the curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship. And also to improve the research publications.

10. The following integrated courses were recommended by all members
    1. Textile Chemical Processing I (IV Semester)
    2. Knitting Technology (V Semester)
    3. Technical Textiles II (VI Semester)
    4, Nonwoven Technology (VII Semester)

11. Regarding Virtual Laboratories experts suggested to add certain open-source software's, and that could be application of point of view in Woven fabric construction and Garment production. It is submitted to Academic council for approval.

12. The following discussion were made by expert in BoS meeting regarding Choice Based Credit System

I. Self-study courses can be planned to offer in Even semester of 2023-24 – Members recommended to conduct certain portion syllabus or anyone are two can be carried out as a self-studies content in the current regulation R2022.

II. One credit course can be planned to offer by industry experts in Even semester of 2023 -24 – Based on their suggestion department planned to conduct one credit course by industry experts with 15 hours duration and followed by suitable assessment methodologies.

The following **one credit courses** approved by the members – Maintenance of Textile Mills (Spinning), Process Control in Garment Manufacturing Industry & Denim Washing.

III. While Evaluating, students who are Studying NPTEL/ MOOC courses, based on the course content, the candidate could waive the courses which are 70 to 75% similar to the NPTEL courses for both UG & PG – This recommendation will be submitted to Academic council.

IV. For roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. the committee members advised to add Textile Weaving CAD design & Garment CAD design based practical labs may improve the creativity knowledge.

V. UG Students can present at least one paper in symposium or national/international conferences during course of study.

13. Minor and Honours degree in Regulations 2022 – Members suggested to offer Fashion Technology, Smart Textile Honours degree – Recommendation is submitted to Academic council.

14. Vision, Mission, Program Educational Objectives (PEOs) & Program Outcomes (Pos) were presented and suggestions were sought by BoS Chairman. BoS Members approved the existing Vision, Mission, Program Educational Objectives (PEOs) & Program Outcomes (Pos).

15. Discussion about Question Paper Reforms – Internal and End Semester Examination was held. BoS members reconfirmed the adherence of the Revised Bloom Taxonomy in internal and End Semester examinations

Chairman – BoS

Dr. G. KARTHIKEYAN, B.E., M.Tech., Ph.D
Professor and Head
Department of Textile Technology
K S Rangasamy College of Technology
Tiruchengode-637 215

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(Autonomous Institution affiliated to Anna University, Chennai)

Department of Nano Science and Technology

The Board of Studies meeting held on 22.11.2023 with the Greeting and welcome by the Principal and the Board of Studies Chairman. The Chairman of BOS introduce the newly constituted BOS and internal members to the forum.

The chairman of Board of Studies explained the academic process followed in the Department which includes the completed Regulation, Teaching and Learning process, funded projects received and the major achievement of the Department.

Name of the Body	Board of Studies (BoS) – Department of Nano Science and Technology UG and PG
Meeting No	25
Date & Time	22.11.2023 & 02.00 PM
Venue	NST, Conferenc Hall

AGENDA for BoS Meeting

2023 – 2024 (EVEN SEMESTER)

S.No.	ITEMS
1	Curriculum and syllabi of VIII Semester R 2018 of UG courses Curriculum and syllabi of III-IV Semester R 2022 of PG courses
2	Revision in the Curriculum and syllabi of VIII Semester R 2018 of UG Revision in the Curriculum and syllabi of III-IV Semester R 2022 of PG
3	List of open elective courses and value-added courses offered in 2023-24 (ODD Semester) and planned to offer in2023-24 (Even semester)

4	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)** I. Total No. of credits for the UG programme II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & cross cutting issues. IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students V. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories VI. New courses offered
5	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (ODD Semester) and planned to offer in Even Semester of 2023-24 II. One credit course offered in 2023-24 (ODD Semester) and planned to offer by industry in 2023-24 (Even Semester) III. Skill based courses offered in 2023-24(ODD semester) and planned to offer 2023-24(Even Semester) IV. International Certification completed in 2023-24 with credits V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. VI. Evaluation & course outcome plan for integrated courses, Project based & System Based Courses
6	**Stake holders feedback and action taken**
7	**Suggestions from IQAC**
8	**Any other matters** Question Paper Pattern – Internal and End Semester Examination Naan Mudhalvan – Value Added Course offered in ODD semester 2023-24 Suggestions and permission to start new programmes in thrust areas Introduction of Tamil courses and its assessment in R2022 as Extra Credits NCC as additional Credit \Waiver in R2022, R2018

Minutes of the Board of Studies Meeting

	BoS Meeting No:	25		Date:	22.11.2023	Venue:	NST Hall
S.No.	Agenda	Name & Nominee	Discussions/ Suggestions	Action to be Taken	Responsibility	Target	Remarks
1	Curriculum and syllabi of VIII Semester R 2018 of UG courses & Curriculum and syllabi of III-IV Semester R 2022 of PG courses The Curriculum and syllabi of UG and PG couses are discussed among the BoS members						
2	**Revision in the Curriculum and syllabi of VIII Semester R 2018 UG**						
I	50 NT E51 - Nanotribology	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested to include the Gecko adhesion-Adhesion mechanism at soft polymer interface in the II Unit.	Updated	Dr. A. Karthik (BoS Members)	Elective V	-
		Dr. Chinnuswamy Viswanathan, (Subject experts, External)	Suggested to add content of Non adhesive lotus and other hydrophobic materials in Unit II				
		Dr. L.C. Nehru (Subject experts, External)	Suggested to the following point to add in Unit II: Types and properties of lubricants-Lubricant additives				
II	50 NT E52– Nano Robotics	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested to additional imaging system like Confocul image for nano robot materilas in III unit Suggested the change V unit title like Structure of nanorobotic and applications	Updated	Mr. R. Mohanraj (BoS Members)	Elective V	

		Mr. M. Anto Godwin (Industrial Expert)	Suggested to revise the syllabyus with following inputs: Actuation in nanoscales-Electrostatics-Electromagnetics-piezoelectric				
III	50 NT E53- Nanocomposites – Design and Synthesis	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested to add the nanocomposite industrial applications in V unit	Updated	Dr. S. Satheeshkumar (BoS Members)	Elective V	-
		Dr. L.C. Nehru (Subject experts, External)	Suggested to include the Rheological properties in IV unit				
		Dr. Chinnuswamy Viswanathan, (Subject experts, External)	Suggested incude the nanocomposite such as Solution blending-Latex compounding-Melt intercalation-In-situ polymerization in III Unit				
	50 NT L02 - Nanotechnology in Industries	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council) and All subject expert	Suggested to revise the entire syllabus based on specific induatrial application of nanotechnology in different doamin	Updated	Mr. R. Mohanraj (BoS Members)	Open Elective	-

	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)		Suggested to added additional text book and refrence for the above courses	Updated	BoS Members	Elective	-
2.	**Revision in the Curriculum and syllabi of III –IV semester R2022 PG.** The curricullam and syllabus for I-V semester was prepared with after taking imputs and sugestions from various stakeholder and same is approved in the previous BoS meeting held on 23.12.2022 and 12.05.23. In the present BoS meeting again the discussed the entire curriculam and syllabus of III and IV semester and the BOS members and Anna University nominee suggested the following suggestions. Generall Suggestion: Recent text book and refrence book to be updated in the following courses						
I	60 PNT 301 – Applications of Nanocomposites	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested that to change the I st unit of titile with Over view of nanocomposites	Updated	Dr. S. Satheeshkumar (BoS Members)	Syllabus of III rd sem	-
II	60 PNT 302 - Nanotechnology in Energy Storage Devices	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested that to change the I st unit of titile with Over view of energy storage devices	Updated	Mr. R. Mohanraj (BoS Members)	Syllabus of III rd sem	-
III	60 PNT E23 - Corrosion Engineering	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested to change add the nano coatings topic in IV th unit.	Updated	Dr. A. Karthik (BoS Members)	Syllabus of III rd sem	
IV	60 PNT E24 – Nano safety and Environmental Issues	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested that to change the V th unit of titile with challenges in nanotechnology	Updated	Mr. R. Mohanraj (BoS Members)	Syllabus of III rd sem	

V	60 PNT E25 - Micro and Nano Electro Mechanical Systems	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested to add the Bio MEMS & NEMS topic in V th Unit	Updated	Dr. A. Karthik (BoS Members)	Syllabus of III rd sem	
VI	60 PNT E26 – Nanotechnology in Industry	(Anna University Nominee, Subject expect,	All of Boaed of member suggested that revise the entire syllabus based on the industrial applications for specific industry.	Updated	Dr. A. Karthik (BoS Members)	Syllabus of III rd sem	
VII	60 PNT E35 - Nanotechnology in Textile and Agriculture Industry	Dr.V.Pugalenthi (Anna University Nominee, Nominated by Academic Council)	Suggested that to change the V th unit of titile with Applications in Textile and Agriculture	Updated	Dr. A. Karthik (BoS Members)	Syllabus of III rd sem	
3.	**List of open elective courses and value-added courses offered in 2023-24 (ODD Semester) and planned to offer in2023-24 (Even semester)**						
	Open elective courses i) 50 NT L01 Nanotechnology in Food Preservation and Safety Management ii) 50 NT L02 Nanotechnology In Indusries iii) 50 NT L03 Nanotechnology in Defense and Security ii) 50 NT L04 Fundamentals of Nanomaterials and Applications **Value added courses** Electrochemical Workshop						
4.	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022 (PG)						
I	**Total No. of credits for the UG programme: 166 credits & PG: 73 Credit** Discussed about curriculum and syllabi of I & IV semester. The necessary correction has been carried out as suggested by University Nominee and Subject expert						
II	**Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship.**						
	i) Higher Education :20 % of PhD, MS couse in national and internationuniversitie **ii) Career Guidance** :60 % of Professional Core and open electives courses **iii) Entrepreneurship** :20 % of Start up and Entrepreneurship course						

III	**Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students**
	i)Innovative Design:30% of Labaratory core papers **ii)Critical Thinking Skills:**30% of Question paper setting based **iii)Problem Solving Ability:** 50% of Tutorial courses
IV	**Virtual Laboratories & Industry sponsored / Specific Laboratories**

S.No	Name of Course with Code	Semester	Name of Institution / Open Source Tools
1	60 PNT 1P1 Adannced Nanomaterials Synthesis Laboratory	I	https://wecanfigurethisout.org/NANO/Nano_home.html
2	60 PNT 1P2 - Nano Biotechnology Laboratory	I	UTAH Valley Universityhttps://www.uvu.edu/physics/nanotech/practice/vr_lab.html
3	60 PNT 2P1 Ad Characterization Laboratory	II	https://nanoyou.eu/en/component/content/article/45-virtual-experiments/74-
4	60 PNT 2P2 Nanomaterials Device Fabrication and Analysis Laboratory	II	https://nanoyou.eu/en/component/content/article/45-virtual-experiments/74-

V	**New courses offered-Nil**
6.	**Discussion on Choice Based Credit System -UG**
I	**Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2022-23 (ODD semester) and planned to offer in Even semester of 2023-24** i) 4th Year students are motivated to enrole the ICT academy Learnathoncouses(based on No. of course completion, mark will be added) ii) 4th student are encouraged to complete the electrochemical characterization tool for understanding the physico-chemical properties of materilas. iii) 4thYear students are encouraged to enrollethe NPTEL courses and faculty members act as mentor for them.

II

One credit course offered in 2022-23 (ODD semester) and planned to offer by industry in 2023-24(EVEN semester)

S.No	Name of Course with Code	Semester	Name of Institution / Open Source Tools
1	Advanced Nano Fabrication Techniques	VII	INUP – CSRI Bengaluru & CECRI - KARAIKUDI

III

SWAYAM / NPTEL online courses

4 th year students are completed NPTEL online courses in current academic years (2023-23)

- Industrial Biotechnoly - 4 student pass

IV

Assessment pattern for project based Open Elective / Few Electives

Industry based elective course/open elective courses :Miniproject based on the course (Miniproject - 30% weightage, 20% - Industry based assessment-20%, 30% Continuous Assessment, 20% Quiz)

V

Skill based courses offered in 2022-23(oodd semester) and planned to offer 2023-24(Even semester)

- 3D printing and design.

Skill based & Value-added courses offered planned to offer in Even semester of 2023-24

- Matlab Programming

The necesaory approaval for this course has been received from previous BoS meetings.

VI

International Certification completed in 2022-23 with credits

i) 2 or 3 credits are recommended based on working hours and same was submitted to AC for further approval.

VII

Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.

S.No.	Name of Laboratory with Code	Semester	Contest (Design / Hackathon / Ideathon, etc.)
1	50 NT 7P1:Device Fabrication and Testing Laboratory	VII	Self-powering sensor and energy harvesting device- Ideathon

VIII

Evaluation & course outcome plan for integrated courses

<table>
<tr><td></td><td>i) Eeach theritical course, three continuous assement test will be conducted (each subject 60 mark)
ii) Eeach Laboratory course, continuous assement made for all the ten experiment and then two model exam will be proposed (100 marks)</td></tr>
<tr><td>IX</td><td>Internship for Students (3rd& 4th Year)
The following credit system offering to the students undergoing internship/doing projects in relevant industry:
<table>
<tr><th>Duration of Training /Internship</th><th>Credits</th></tr>
<tr><td>2 Weeks</td><td>1</td></tr>
<tr><td>4 Weeks</td><td>2</td></tr>
<tr><td>6 Weeks and above</td><td>3</td></tr>
</table></td></tr>
<tr><td>7.</td><td>Stake holders feedback and action taken
The the curriculum and syllabi of VIII Semster R2018 UG courses updateby receiving the following suggestions from stakeholders
Alumni: Modified the syllabus in I st Unit of Nanotribology with following content: Classical tribology-Bio tribology- Green tribology- Nanotribology-Computational tribology-Space tribology-Nature of Solid surfaces
Faculty: The faculty are revised the Nanotribology (III unit syllabys)-with following insights : Principles of atomic friction-Chemically bonded lubricant films- Nanoscale friction-Friction between solids-Frictional forces.
Employer: I gone through the entrie syllabus of nanorobotics: I would like to the new content: NANOROBOTS IN MEDICINE Biochip-Nu bots-Positional Nano-assembly-Types of nanorobots:3D motion nano machines from DNA-Nano swimmers-Nanorobotics in surgery-Diagnosis and Testing-Gene therapy-Nano robots in cancer detection and treatment-Nano dentistry-Breaking up kidney stones and blood clots-Artificial oxygen carrier.
Faculty: Revised the syllabys with addition of important parameter and processing method for nanocomposite: Natural rubber nanocomposites and Micro composite-Exfoliated nanocomposite-Intercalated nanocomposite in the Nanocomposites – Design and Synthesis courses.</td></tr>
<tr><td>8</td><td>Suggestion from IQAC</td></tr>
<tr><td>9</td><td>Question Paper Pattern – Internal and End Semester Examination
Asper Anna Univesity guidelines, Theory course: Internal-40 Marks & External-60 Marks & Practicla courses: Internal-60 Marks & External-40 Mark offered in (R) 2022 PG the same was dicuyssed in the BoS meeting.
Naan Mudhalvan – Value Added Course offered in ODD semester 2023-24
All the sutedents was undertaken the same.
NCC as additional Credit \Waiver in R2022, R2018
Extra credit and Waiver optin will be given for the student those who are cleared the certifcates</td></tr>
</table>

Chairman Board of Studies
Department of Nanoscience and Technology
K.S.Rangasamy College of Technology,
Tiruchengode - 637 215

K.S.RANGASAMY COLLEGE OF TECHNOLOGY,TIRUCHENGODE-637215

(Autonomous)

Department of Management Studies

Minutes of the 25th Board of Studies Meeting

	BoS Meeting No: 25		Date: 19.10.23		Venue: HoD Cabin MBA		
S.No.	Agenda	Name &Nominee	Discussions /Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	i) Curriculum and syllabi of I – IV Semester of MBA program- R2022	Dr.M.Kalpana Associate Professor, PSG College of Technology (Anna University Nominee) Dr.S.Ganesan Head- Education Initiative Logistic Sector Skill Council (Subject Expert) Dr.N.Thamaraiselvan National Institute of Technology Trichirappalli (Subject Expert) Mr.C.Ram Senior Manager- HR JSW Steel Limited (Industry Expert) Mr.Janakiraman Sakthivel Zonal Sales Manager, Equitas Small Finance Bank Limited, (Industry Expert)	The discussion was held for the following aspects : Head of the department briefed the whole curriculum	The following action will be taken Subject Experts approved with the 100 credits for the MBA Program of K.S.Rangasamy college of technology Subject Experts and Industry Experts reviewed the curriculum as presented and agreed it	HoD and Faculty Members	2023 -24	Submitted to Academic Council for Approval

		Mr.Manickavel Sundarrajan Manager- Delivery Operations, Tiger Analytics (Meritorious Alumnus) Mr.K.Deepanraj HR Manager Ujjivan Small Finance Bank Ltd (Meritorious Alumnus)					
2.	**ii. Revision in the Curriculum and syllabi of II & IV semester R 2022**	Dr.M.Kalpana Associate Professor, PSG College of Technology (Anna University Nominee) Dr.S.Ganesan Head- Education Initiative Logistic Sector Skill Council (Subject Expert) Dr.N.Thamaraiselvan National Institute of Technology Trichirappalli (Subject Expert) Mr.C.Ram Senior Manager- HR JSW Steel Limited (Industry Expert)	Anna University Nominee insisted to include the following topics: **Organisational Behaviour:** Cross cultural Management, Factors affecting Perception, Emotional Intelligence and Emotional immunity **Managerial Economics:** Supply of Money	The concerned subject handling faculty member will implement the topics suggested by BoS Members	HoD and Faculty Members	2023 -24	Submitted to Academic Council for Approval

		Mr.Janakiraman Sakthivel Zonal Sales Manager, Equitas Small Finance Bank Limited, (Industry Expert) Mr.Manickavel Sundarrajan Manager- Delivery Operations, Tiger Analytics (Meritorious Alumnus) Mr.K.Deepanraj HR Manager Ujjivan Small Finance Bank Ltd (Meritorious Alumnus)					
3.	**iii) Discussion on Curriculum of I to IV semester R2022**	(All the above members)	Discussion on R 2022 regulation	Updated topics in the following areas will be implemented as suggested by stakeholders in R 2022 61 MB 201 - Production Management - Operations Strategy, Managerial roles and responsibilities in operation - Master Production Schedule 61 MB 203 - Marketing Management - Channel cooperation; Conflict 61 MB 204 – Financial Management Financial Planning: Introduction,	HoD and Faculty Members	2023 -24	Submitted to Academic Council for Approval

				Objectives, Benefits, Guidelines, steps in Financial Planning - Dimensions in working capital management. 61 MB 205 – Applied Operations Research -Game Theory -zero sum games: Arithmetic and Graphical Method. 61 MB 401- International Business Management -Current trend on the Buying pattern. 61 MB 4M1 - Services Marketing - Relationship marketing - Evaluation of customer relationships - Benefits of customer relationship. 61 MB 4M3- Consumer Behaviour - Impact of Advertisement on Consumer behavior 61 MB 4H2 - Performance Management -Performance Improvement Planning (PIP)			
8.	**iv). List of open elective courses and value-added courses offered in 2022-23 (Odd Semester) and planned to offer in 2023-24 (Even semester)**	(All the above members)	Open elective course discussion was held Suggestions sought to offer new value-added course for 2023-24 Even semester BoS Members suggested to include Artificial Intelligence in Business Management as Value added course	2023-24 odd semester, we have offered Web Design as open elective to our MBA students. It is decided to offer Artificial intelligence value added course for the forthcoming semester	HoD and Faculty Members	2023 -24	

	v) Discussion on Curriculum of I to IV Semester for R 2022	(All the above members)	Disscussion about Total No. of credits in R 2022 Review about the Curriculum and syllabi and its compliance to pursue higher education & career guidance and startups & entrepreneurship Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students.	The total credit 100 is agreed by all the BoS members and its distribution pattern was also reviewed and agreed BoS Members observed the career guidance courses and the opportunity of entrepreneurship in the curriculum was reviewed and agreed The Industry Experts suggested to introduce online diary system as internship reporting method. It will improve students critical learning process BoS members suggested to undergo a prerequisite course for operations management specialization from Logistics Skill council The Industry experts also suggested to pursue IIBF courses to enhance the banking employability aspects The Industry Experts insisted to go for MS-Excel for thorough knowledge -Courses on Public Speaking, interview skills are in need of the hour -BoS Members suggested to shift to Oral assignment presentations than a assignment report which reflect on their communication skills.	HoD and Faculty Members	2023 -24	Submitted to Academic Council for Approval

vi) Discussion on Choice Based Credit System

i. Students are pursuing NPTEL courses as per their choices and it can be waived as per the guideline of College.
ii. Suggestions were sought from BoS Members regarding new value-added courses to be offered. The BoS Alumni Member suggested AI related value added course
iii. BoS Members highlighted the importance of Skill based & value-added courses that can improve the placement ratio and entrepreneurship. The skill-based course suggestions can be sought from Industry experts from various industries

vii) Stakeholder's feedback and action taken

BoS Members approved the suggestions collected from Alumni, Industry members' feedback for various subjects in R2022

xi) Any other matters

i)Vision, Mission, Program Educational Objectives (PEOs) & Program Outcomes (POs) were presented and suggestions were sought by BoS Chairman. BoS Members approved the existing Vision, Mission, Program Educational Objectives (PEOs) & Program Outcomes (POs).

ii) Discussion about Question Paper Reforms - Internal and End Semester Examination was held. BoS members reconfirmed the adherence of the Revised Bloom Taxonomy in internal and End Semester examinations

iv) The members appreciated the suggestions to start new programs in thrust areas like MBA in Fintech, and MBA in Entrepreneurship Development.

v) BoS Members given the guidance for NBA Accreditation Process

30/10/2023

BoS Chairman

K.S. RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215

(An Autonomous Institution, affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Artificial Intelligence and Data Science

ACADEMIC YEAR 2023-2024 (EVEN SEMESTER)

	BoS Meeting No:09			**Date:24.05.2024**		**Venue: Seminar Hall**
S.No.	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**
1.	**Curriculum and Syllabi of VII & VIII Semester – R2022**	**Dr.B.Vinoth Kumar, AU Nominee Mr. D. Santhosh, Alumnus Dr.V.Thilagavathe, Co-opted External Ms.ManjariAnandan , Co-opted External**				
	60 AD 702 & NATURAL LANGUAGE PROCESSING	Dr.B.Vinoth Kumar, AU Nominee	Suggested to include Visualization of Wordcloud	Included Visualization of Wordcloud	Module Coordinator	25.05.2024
	60 AD E32 & DATA WAREHOUSING	Dr.B.Vinoth Kumar, AU Nominee Mr. D. Santhosh Alumnus	Suggested to modify module 4,5 related to data warehousing	module 4,5 are changed related to data warehousing	Module Coordinator	25.05.2024
	60 AD E33 & STORAGE TECHNOLOGIES	Dr.B.Vinoth Kumar, AU Nominee ManjariAnandan Co-opted External	Suggested to reduce module 3 contents	Reduced module 3 contents	Module Coordinator	25.05.2024
	60 AD E52 & ARTIFICIAL NEURAL NETWORKS	Dr.B.Vinoth Kumar, AU Nominee ManjariAnandan Co-opted External Dr.V.Thilagavathe	Suggested to include case studies and some applications	Included case studies and some applications	Module Coordinator	25.05.2024

2.	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018.**	Honors will be offered without specialization and can be offered from professional electives.
3.	**List of open elective courses and value-added courses**	Open Elective (Even Semester Offered) – 1. 50 AD L06 - Visualization Techniques 2. 60 AD L01 - Robotic Process Automation Open Elective (Odd Semester Planned) – 1. 60 AD L02 - Visualization Tools Value-added Courses (Even Semester Offered) 1. AI for Everyone 2. Applied AI with Deep Learning Value-added Courses (Odd Semester Planned) 1. Network Programming 2. Gaming and Virtual Reality 3. Robotic Process Automation **The members of BoS approved to offer the value-added courses. These courses are forwarded to Academic council for further approval.**

4. Discussion on Curriculum of I to VIII Semester for R 2022 (UG)

I. Total No. of credits for the UG programme - 163

II. Preparation of syllabi for I to VIII semester subjects R2022 and Recommendations

- Presented the I to VIII semester Curriculum and Syllabi and it gets approved.

III. Curriculum and syllabi shall meet the Requirements to pursue higher education & Career guidance and startups & entrepreneurship & cross cutting issues

-Yes, Curriculum and syllabi meet the requirements to pursue higher education & career guidance and start-ups & entrepreneurship by offering the following courses

- Career Skill Development I, II, III, IV, & V
- Start-ups and Entrepreneurship
- Research Skill Development –I

IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem-solving abilities of students

- Yes, Curriculum & syllabi improves innovative, design & critical thinking skills and problem-solving abilities of students

V. Virtual Laboratories & Industry sponsored / Specific Laboratories

- Planned to use virtual laboratories for Data Structures, Machine Learning.

- Planned to introduce following core and new elective courses

Core:

- Computer Vision
- Natural Language Processing

Electives:

- Virtualization
- Data Warehousing
- Storage Technologies
- Software Defined Networks
- Stream Processing
- Security and Privacy in Cloud
- Ethical Hacking
- Digital and Mobile Forensics
- Social Network Security
- Modern Cryptography
- Cryptocurrency and Blockchain Technologies
- Network Security
- Blockchain Technologies
- Artificial Neural Networks
- Cyber Security
- Quantum Computing
- Game Development
- Cognitive Science

5. Discussion on Choice Based Credit System

I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (Even semester) and planned to offer in Odd semester of 2024-25

- Self-study courses(NPTEL,MOOC) (2023-2024, Even Semester)
    1. English for Competitive Exams
    2. Introduction to Internet of Things
    3. Introduction to Industrial 4.0 & Internet of Things
    4. Joy of Computing using Python
- Self-study courses (NPTEL,MOOC) proposed (2024-2025, Odd Semester)
    1. Cyber Security and Privacy
    2. Ethical Hacking

3. Software Testing

II. One credit course offered in 2023-24 (Even semester) and planned to offer by industry in 2024-25(Odd semester)

- **One Credit Course planned to offer (2024-25 Odd Semester)**
  1. Augmented Reality

III. Skill based courses offered in 2023-24(Even semester) and planned to offer 2024-25(Odd semester)

- Skill based Courses offered in 2023-24(Even semester) – Universal Human Values , Career Skill Development I , Career Skill Development III
- Skill based Courses planned to offer 2024-25(Odd semester) - Unity Game Engine for Virtual Reality, Career Skill Development II , Career Skill Development IV

IV. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.

1. C Programming Laboratory -Codeathon
2. Python Programming Laboratory - Hackathon
3. Data Structures Laboratory - Codeathon
4. Java Programming Laboratory - Hackathon
5. Database Design Laboratory -Codeathon

V. Evaluation & course outcome plan for integrated courses

- In Integrated courses, Practical component shall be evaluated as part of Assignment 3 to prepare the students for industry ready
-

VI. Internship details of the students (2nd , 3rd & 4th Year)

- Students undergoing 6/8 weeks of training /doing projects in industry / academic institutions of repute shall be given 3 credits and one elective course in 7 th or 8 th semester shall be waived.

6. Stakeholders feedback and action taken

S.No.	Name of Stakeholder	Action Taken	Course Name (changes are introduced)
1.	VIMALKUMAR RAJENDRAN 8, South Phase, MTH Road, Ambattur Industrial Estate Ambattur (AMB-6), vimalkumar.rajendran95@gmail.com, 9677352564	Evidence-based hypothesis analysis topics to be added	60 AD E11 & Knowledge Engineering
2.	Gokul M (Alumni)	Mixed-Initiative Reasoning topics to be added	60 AD E11 & Knowledge Engineering

3.	Eniyavan N(Alumni)	Include case study for Clinical Prediction Models	60ADE15 Healthcare Analytics
4.	Sundharavelu Chandrasekaran (Alumni 1996-2000)	Indexing , Editing topics to be added	60 AD 701- Computer Vision
5.	Sundharavelu Chandrasekaran (Alumni 1996-2000)	Visualizaing Data Tools and examples, Decision Tree, Statistical approximation to the streaming data topics to be added	60 AD E35 - Stream Processing
6.	Sundharavelu Chandrasekaran (Alumni 1996-2000)	Connectionism is included	60 AD E56 - Cognitive Science

7. Suggestions from IQAC

Value Added Courses focusing on women & empowerment

i) Women Health & Human Rights - Coursera
ii) Gender Equality through Inclusive Design - Coursera
iii) Gender Equality and Women Empowerment - Udemy

Minor Degree:

- Offering a minor degree in Machine Learning, Data Science and artificial intelligence to students of non-circuit branches like Mechatronics, Mechanical, EEE, ECE, TXT.
- Offering a minor degree in Business and Entrepreneurship to the students wants to be an entrepreneur.

Dr.S.Sarumathi
Chairman – BoS
Artificial Intelligence and Data Science
(UG)

Dean Academics

Dean Administration

Principal

K.S. RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of CSE (Artificial Intelligence and Machine Learning)

	BoS Meeting No	5		Date:	24.05.24	Venue:	IT Park
S.No	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
1.	**Curriculum and syllabi of V & VI Semester – R2022**	Ms.Manjari Anandan, CEO & Founder, ZHAGARAM , - Member (Co-opted External)	In the App Development course (60 AM E12), it is suggested to use Flutter instead of Apache Cordova	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	V semester of R2022	
			In the Data and Visual Analytics in AI Theory (60 AM 601) and Laboratory course (60 AM 6P1), it is suggested to change the course name to 'Visual Analytics in AI'.	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VI semester of R2022	
			In the Data and Visual Analytics in AI Laboratory course (60 AM 6P1), it is suggested to include	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VI semester of R2022	

			laboratory exercises that incorporate visualization techniques using Python packages for visualization.				
			In the Video Creation and Editing course (60 AM E34), it is suggested to replace modules 4 and 5 with Canva Studio and Filmora.	Necessary updates are carried out and submitted to Academic Council for further approval	Module Coordinator	VII semester of R2022	
		Mr.D. Santhosh, Tech Lead, Honeywell Technology Solutions. - Member (Meritorious Alumnus)	In Web Technology course (60 AM 603) suggested to include JSON	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VI semester of R2022	
		Dr. B. Vinoth kumar, Professor, Dept. of IT, PSG College of Technology. - Member (Outside Nominated by University)	For the Cloud Services Management course (60 AM E22), it is suggested to change the title of module 1 and 3.	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VI semester of R2022	
			For the Text and Speech Analysis course (60 AM E31), it is suggested to change the title of module 1.	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	

			For the UI and UX Design course (60 AM E32), it is suggested to change the title of modules 1 and 3.	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	
		Dr. B.Surendiran Associate Professor, Dept. of CSE, National Institute of Technology Puducherry. - Member (Co-opted External)	In the Text and Speech Analysis course (60 AM E31), it is suggested to make the following changes: • Title of the first module has to be changed. • Google Speech has to added to Text module and Image classification has to be included.	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	
			In the Game Theory course (60 AM E36), it is suggested to add the following: • Vinmax Algorithm • Tiktok Program	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	
			In Crypto currency and Blockchain Technologies course (60 AM E35), it is	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	

			suggested to add Healthcare applications.				
2.	**Revision in the Syllabi of I, II , III & IV Semester - R 2022**	Mr. G.Illachezhian, COE Head, Gen AI and CAI (Alumni)	In the Computer Architecture course, it is suggested to add Cloud ARCH and the Well-Architected Framework.	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	III semester of R2022 (2023 Admitted Batch)	
3.	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018**	NIL					
4.	**List of open elective courses and value-added courses**	• Exploratory Data Analysis – Offered as an open Elective course R2022. • Technical Support Fundamentals – Planned to Offer as a Value-Added Course for ODD Sem. (2024-2025). • People & Soft Skill for Professional & Personal success Specialization – Planned to Offer as a Value-Added Course for ODD Sem. (2024-2025) The Bos Members approved and submitted it to Academic Council for further approval.					

5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG)**	• Curriculum of I to VI Semester for R2022 (UG) and the syllabi of V and VI semester are finalized according to the suggestions given by BoS Members and it is resolved to submit the Syllabus with above changes to Academic council for approval.
		• Curriculum and syllabi meet the requirements to pursue higher education & career guidance and startups & entrepreneurship by offering the following courses
		  • Core Courses for GATE Preparation
		  • Career Skill Development I, II, III, IV, & V
		  • Start-ups and Entrepreneurship
		  • Research Skill Development					

6.	**Discussion on Choice Based**	• Self-study courses (NPTEL) proposed (2023-2024, Even Semester)					

	Credit System	1. Soft Skill Development 2. Education for Sustainable Development 3. English Language for Competitive Exams 4. Introduction to Machine Learning 5. Data Analytics with Python • Self-study courses(NPTEL) (2024-2025, ODD Semester) 1. Responsible and Safe AI systems 2. Computer Graphics 3. The Joy of Computing using Python BOS Members approved the above list of courses.
7.	**Stake holders feedback and action taken**	

S.No	Name & Nominee	Name of the course	Feedback
1	Ms.Manjari Anandan, (Co-opted External)	App Development	• Use Flutter instead of Apache Cordova
		Video Creation and Editing	• Add Canvas Studio and Filmora in module 4 and 5.
		Visual Analytics in AI	• Add visualization Techniques using Python packages.
2	Dr. B.Surendiran (Co-opted External)	Text and Speech Analysis	• Title of the first module has to be changed. • Google Speech has to added to Text module and Image classification has to be included.
		Cryptocurrency and Blockchain Technologies	• Add Healthcare Applications in any module.
		Game Theory	• Add Vinmax Algorithm and Tiktok Program.
3	Mr.D. Santhosh (Meritorious Alumnus)	Web Technology	• Add JSON.

8.	**Suggestions from IQAC**	Value Added Courses focusing on Women & empowerment i) Women Health & Human Rights through Coursera ii) Gender Equality through Inclusive Design through Coursera iii) Gender Equality and Women Empowerment through Udemy
9.	**Any other matters**	The internal and external examiners lists are presented by BoS Chairman and all the members approved the same.

BoS – Chairman

CHAIRMAN
Board of Studies
Department of Computer Science and Engineering (AIML)
K. S. Rangasamy College of Technology
Tiruchengode - 637 215, Namakkal-Dt.

Dean – Academics

21/06/2024

Dean – Administration

Principal

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi) (Times New Roman 9)

Minutes of the Board of Studies Meeting

The Board of Studies meeting held on 21.05.2024 with the Greeting and welcome by the Board of Studies Chairman. The Chairman of BOS introduces the members to the forum.

The Chairman of Board of Studies explained the academic process followed in the Department which includes the completed Regulation, Teaching and Learning process, funded projects received and the major achievement of the Department.

The detailed discussion made by the Internal and external members as given in the agenda are given below:

Department of Biotechnology (UG & PG)

	BoS Meeting No	26		Date:	21.05.2024	Venue:	M.S.Swamynathan Seminar Hall
S.No	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
1.	Curriculum and syllabi of VII & VIII Semester – R2022	Dr.V.Pugalenthi & Dr. P. Selvamani	➢ Suggested to change the content of the unit entitled with"Machine learning for molecules" in the subject AI for Biotechnology	Suggestions are incorporated	Module Coordinator	Immediate	-
			➢ Suggested to remove RSD-II and also to reframe the syllabus of RSD-1 ➢ Mainly to include statistical analysis, patent, graphical abstract	RSD – II has been removed from Eigth semester , syllabus reframed			
			➢ Suggested to remove internship from last semseter	As per the suggestions corrections have been carried out and			

	BoS Meeting No	26		Date:	21.05.2024	Venue:	M.S.Swamynathan Seminar Hall
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
				submitted to Academic Council for further approval			
2.	Revision in the Syllabi of I – VI Semester - R 2022	Dr.V.Pugalenthi & Dr. P. Selvamani	➢ The nominee suggested to change the theory hours and credit of the course Bioinformatics and assesment guidelines to be mentioned in the syllabi of Bioinformatics.	The course in V semester of R2022 has been modified into project based learning and the guidelines are incorporated	Module Coordinator	Immediate	-
			➢ The nominee recommended to keep the Mandatory course Start-ups and Entrepreneurship in seventh semester and also to rename the subject.	As per the suggestions corrections have been carried out and submitted to Academic Council for further approval			
			➢ The nominee suggested to remove the course Biofuel and insisted to incorporate Enzyme technology in vertical Industrial Biotechnology	Enzyme Technology has been included in vertical Industrial Biotechnology and submitted to Academic Council for further approval			
			➢ Chemical Reaction Engineering may be renamed as Chemical & Biological Reaction Engineering. ➢ In unit 4, Heterogeneous catalysis can be	Suggestions are incorporated and submitted to Academic Council for further approval			

	BoS Meeting No	26		Date:	21.05.2024	Venue:	M.S.Swamynathan Seminar Hall
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
			incorporated in the subject Chemical Reaction Engineering.				
3.	Minor and Honor degree course curriculum and syllabi in R2022 and R2018	Dr.V.Pugalenthi & Dr. P. Selvamani	➢ To rename toxicology as Pharmacology and Toxicology in the elective	Suggestions are incorporated and submitted to Academic Council for further approval	Module Coordinator	Immediate	-
			➢ Computational system Biology renamed as System Biology in vertical Medical Biotechnology	Suggestions are incorporated. Computational system biology renamed as system biology and submitted to Academic Council for further approval			
			➢ Instead of Bioinstrumentation in vertical Industrial Biotechnology, Translational Biotechnology can be incorporated	Suggestions are incorporated and submitted to Academic Council for further approval			
			➢ In vertical Quality and Regulatory Affairs, Pollution and its management replaced by the course IPR. ➢ Environmental Biotechnology from vertical Quality and Regulatory Affairs can be shifted to vertical Biosciences. ➢ GMP and GLP can be incorporated in the vertical	Modified in the verticals and submitted to Academic Council for further approval			

	BoS Meeting No	26		Date:	21.05.2024	Venue:	M.S.Swamynathan Seminar Hall
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
			Quality and Regulatory Affairs				
			➢ Syllabus of Biosafety and bioethics should be reframed ➢ In vertical Medical Biotechnology, syllabus of stem cell and tissue engineering may be merged as Stem cell technology ➢ Course entitled with "Molecular Medicine and Human Epigentics "can be incorporated in the vertical Medical Biotechnology. ➢ "Strucutral Bioinformatics" can be incorporated in the vertical Computational ➢ Biotechnology and Biophysics can be removed from vertical Computational Biotechnology. ➢ To update Standard book and reference in syllabus.	Suggestions are incorporated in the verticals and submitted to Academic Council for further approval	Module Coordinator	Immediate	-
4	List of open elective courses and value- added courses	Dr.V.Pugalenthi & Dr. P. Selvamani	➢ Green Skill Development ➢ Green, Energy & Environment Management Audits ➢ Waste Management, Soil, Air and Water Audits ➢ Sustainable Development of Materials ➢ Advanced techniques in Molecular Biology ➢ Synthesis of Nanomaterials ➢ Black Soldier Fly Technology ➢ Computational Genomics	List of open elective courses and value-added courses are appreciated by BoS members and submitted to Academic Council for further approval	Bos Chairman	Nil	-

	BoS Meeting No	26		Date:	21.05.2024	Venue:	M.S.Swamynathan Seminar Hall
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
			➢ Food product development ➢ Food Product Development ➢ Basics of Bio python				
5.	**Discussion on Curriculum of I to VIII Semester for R 2028 (UG) and I to IV Semester for R 2022(PG)**						
	Bioethics and Biosafety	Dr. P. Selvamani & Dr.V.Pugalenthi	➢ Unit-03: It is recommended to include the Rights and duties of patentee - remedies & penalties ➢ Unit-05: we can include topics about - international regulations on biosafety	Suggestions are incorporated and submitted to Academic Council for further approval	Module Coordinator	Nil	-
			There is no change in the curriculum and syllabi of I to IV Semester for R 2022(PG)				
6.	**Discussion on Choice Based Credit System**						
I	Self-study courses planned to offer in ODD of 2024-25	Dr. P. Selvamani & Dr.V.Pugalenthi	Online certification courses are appreciated by BoS members and submitted to Academic Council for further approval.The list of online certification courses are ➢ Introduction to Good Clinical Practices ➢ DNA D Coded ➢ Introduction to Forensic Science ➢ Algae Biotechnology				
II	One credit course planned to offer by industry in Even of 2024-25		Basics of Biopython				
III	SWAYAM/ NPTEL/ MOOC courses		The list of NPTEL Course offered in odd Semester for the academic year 2024 – 2025 are ➢ Drug Delivery: Principles and Engineering ➢ Introduction to Developmental Biology ➢ Transport phenomena in Biological Systems ➢ Environmental Biotechnology ➢ Experimental Biotechnology				
7.	Stake holders feedback and action taken	Refer the Attachment					

	BoS Meeting No	26		Date:	21.05.2024	Venue:	M.S.Swamynathan Seminar Hall
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
8.	Suggestions from IQAC	**Value Added Courses focusing on women's empowerment** i) Women Health & Human Rights through Coursera ii) Gender Equality through Inclusive Design through Coursera iii) Gender Equality and Women Empowerment through Udemy ➢ BoS members approved and submitted to Academic Council for further approval **Minor Degree:** ➢ a) Offering a minor degree in Machine Learning, Data Science and artificial intelligence to students of non-circuit branches like Mechatronics, Mechanical, EEE, ECE, TXT. Offering a minor degree in Business and Entrepreneurship to the students wants to be an entrepreneur.					
9..	Any other matters	➢ The BOS members suggested to avoid mini project and to keep only project phase in last semester ➢ NCC as Waiver in R2022, R2018 - Waiving is recommended					

STAKE HOLDERS FEEDBACK AND ACTION TAKEN

S.No.	Name of the Course	Type of stakeholder	Feedback	Action Taken
1	**Metabolomics and Metabolic Engineering**	Mr. Vivek P D (Student)	➢ Stakeholders recommended to include topic: *Case Studies* in Unit-1	Incorporated in R2022
		Mr. Naveen B (Student)	➢ Stakeholders recommended to include *Dynamic Metabolic Network Model* in Unit-1	
		Ms.Sowmiyamathi (Student)	➢ Stakeholders suggested to include Techniques for Identifying Gross Measurement Errors in Unit-3	
2	**Biofuel Technology**	Dr. Ramadoss G (Academician)	➢ Stakeholders suggested to include Factors affecting the economic production of biodiesel and bioethanol in Unit-2 ➢ Included topic: Techno-economic analysis in Unit-1	Incorporated in R2022

S.No.	Name of the Course	Type of stakeholder	Feedback	Action Taken
3	**Fermentation Technology**	Dr. Shyam Kumar Rajaram (Academician)	➢ Suggested to Change the Title of Unit-2 as Production and Recovery of Primary Metabolites ➢ Suggested to remove the words 'Example of' from Unit-2 and 'Kinetics in' from Unit-3 ➢ Suggested to include topic: "Chloramphenicol and any other macrolides' instead of 'Cephalosporin'	Incorporated in R2022
		Mr. Naveen B (Student)	➢ Stakeholders suggested to include Precision Fermentation in Unit – 5	
		Ms.Sowmiyamathi (Student)	➢ Stakeholders suggested to include *Mathematical Models of Microbial Growth* in Unit-4	
		Gopinath Chandran (Industry)	➢ Stakeholders suggested to include BLAST, RASMOL, PYMOL in the second unit (Introduction of Training Modules on Computational Tools)	
		Dr. Lekshmi Gangadhar (Industry)	➢ Suggested to include recent reference books are not included to understand the advanced developments	
4	**60 BT E45 – Agricultural Biotechnology**	Ms. S. Kayalvizhi (Academician)	➢ Suggested to include the methods involved in producing genetically engineered plants. The main concept of genome editing CRIPSPR CAS9 technology has been included to understand the importance of genome editing in agricultural sector. The regulatory and ethical issues related production of transgenic plants have also been included	Incorporated in R2022
		Mr. A. Abdul Haseeb (Employer)	➢ Suggested to include plant tissue culture techniques such as media preparation, sterilization techniques and micropropagation methods.	
5	**60 BT E15 - Biosensors**	Mr. A. Abdul Haseeb (Employer)	➢ Suggested to include Introduction of immune based sensors and enzymatic sensors	Incorporated in R2022
		Mr. Hariharan S (Academician)	➢ In unit 1, suggested to include included types of biological recognition system and in unit 5, the result analysis of the data obtained in biosensor interpretation have been included.	
		Mr. K. Abishek Kumar (Employer)	➢ Suggested to include Basis of biosensor and history of biosensor have been included in unit 1. ➢ Suggested to include Few advancements in modern biosensors included in unit 5.	
6		Dr. A.Puratchikody (Academician)	➢ Suggested to remove the basic of Operating system and introduction on Linux environment ➢ Suggested to include Project based curriculum for the course BI	Incorporated in R2022
		Dr.N.Jeyakumar (Academician)	➢ Suggested to include Microarray, Metabolic pathway, motif, and domain databases under Biological databases module	

S.No.	Name of the Course	Type of stakeholder	Feedback	Action Taken
	60 BT 502 – Bioinformatics	Mr.V. Venkatatramanan (Employer)	➢ Suggested to add Python module instead of Perl language in the module 5	
		C.Shanmathi (Alumini)	➢ Suggested to include Functional Annotation concept in the fourth module	
7	**60 BT 603 – Computer-Aided Drug Design**	Dr. Nitya Nand Sharma (Employer)	➢ Suggested to add shotgun DNA sequencing topic under sequence analysis module	Incorporated in R2022
		Dr.·A.Puratchikody (Academician)	➢ Suggested to add Force field concepts, Pharmacphore concepts	
8	**60 BT 701 – AI for Biotechnology**	C.Shanmathi (Alumni)	➢ Suggested to include AI, ML concepts in the Curriculum	Incorporated in R2022
		Dr.N.Jeyakumar (Academician)	➢ Suggested to add Drug Designing Practical excercises	Incorporated in R2022
9	**60 BT 701 - Downstream Processing**	Ms.P.Divya (Alumni)	➢ Suggested to add Case studies in all the units for easy understanding and application of the syllabi contents.	Incorporated in R2022
10	**60 BT 7P2 - Downstream Processing Laboratory**	Mr. T.G. N. Nagarjun (Alumni)	➢ Suggested to add Chromatography and Freeze drying experiments have been given as design experiments.	Incorporated in R2022
11	**60 BT 603 – Chemical Reaction Engineering**	Dr. P. Shanmugam (Academician)	➢ Suggested to add Pseudo first order and second order reactions have been included in first unit.	Incorporated in R2022
12	**BT E56– Computational System Biology**	Swaminathan S (Industry)	➢ Suggested to include more advanced technologies and its application in fifth unit	Incorporated in R2022
		Dinakaran K (Alumini)	➢ NGS is the starting point where we could analysis the DNA sequence, we could have added intro part to the syllabus. ➢ In unit 5 is heavy with lot of advance technique. ➢ In unit 3, there are lot of parameters can be mathematically derived from DNA and protein like hydrophobicity profiling, contact maps, long and short range contact etc. We could have added this part too.	
		Kaarventhan K S (Academician)	➢ Suggested to incorporate mini projects and case studies.	

S.No.	Name of the Course	Type of stakeholder	Feedback	Action Taken
		Dr. Nanda Kumar D (Academician)	➢ Suggested to reframe the course objectives, include recent reference books and to include project based evaluation	
13	Toxicology	Mr.S.Naresh (Alumni)	➢ Suggested to add Description and Principle of Biotransformation,Process & Difference between Detoxification and Toxification, Application of Toxicology Studies in Research Field have been included in second and fifth unit.	Incorporated in R2022
		Mr.D.Praveen Kumar (Employer)	➢ Suggested to add cell signalling and receptor mediated toxicity, calcium. Mediated toxicity, cytokines Toxicity, toxicogenomics, haemotoxicity, hepatotoxicity, nephrotoxicity, neurotoxicity, cardiotoxicity and local toxicity have been included in third unit	
14	Clinical Trials and Health Care Policies in Biotechnology	Mr.D.Praveen Kumar (Employer)	➢ Suggested to add Government Health Insurance Programs: Medicaid, CHIP, Medicare, Healthcare Quality and the Law have been included in fifth unit.	Incorporated in R2022

BoS Incharge **BoS Chairman** **Dean Admin** **Dean Academics** **Principal**

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE – 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Civil Engineering

BoS Meeting No: 26				Date: 22.05.2024	Venue:	Mechanical Board Room
S.No	**Agenda**	**Name & Nominee**	**Discussion/Suggestion**	**Action to be taken**	**Responsibility**	**Target**
1	**Curriculum and syllabi of VII & VIII Semester – R2022**	Dr.M.P.Muthuraj University Nominee	In 60CE7P1 -Estimation and Quantity Surveying Laboratory, Primavera or MS Projects to be included in the Fifth Module.	As per the suggestion the topic MS Projects is included in the syllabi.	Module Coordinator	Immediate
			In 60CEE31 -Repair and Rehabilitation of Structures, the topic Carbon wrapping to be removed. Also suggested to modify the 3rd, 4th and 5th Module as Repair, Rehabilitation of structures, Forensic Engineering and Demolition Techniques	The Modules were modified, and the content was revised accordingly.	Module Coordinator	Immediate
			In 60CEE33 - Dynamics and Earthquake Engineering, the code IS 4236 to be removed. The topic Base Shear to be included as Evaluation of Base shear using IS 1893.	As per the suggestion, the corresponding IS 4236 and IS 1893 is added.	Module Coordinator	Immediate
			In 60CEE35- Building Services, the topic sensor to be included in any module.	The topic sensor was included in the second module	Module Coordinator	Immediate
		Dr. Ibrahim Bathusha M Subject Expert	In 60CE7P1 -Estimation and Quantity Surveying Laboratory, Number of Experiments can be increased.	As per the suggestion experimental topics was included	Module Coordinator	Immediate
			In 60CEE32 -Energy Science and Engineering, the content Hidal Energy, Nuclear Energy and Thermal Energy to be added in the first module. Also, the content to be reduced for each module.	The content of the course was revised with the inclusion of the above Hidal Energy, Nuclear Energy and Thermal Energy.	Module Coordinator	Immediate
			In 60CEE34 - Pavement Analysis and Design, IRC 37 and IRC 58 to be included in the 2nd and 3rd Module.	The Code IRC 37 and IRC 58 is added	Module Coordinator	Immediate
			In 60CEE36- Watershed Conservation and Management, the topic Application of GIS to be added in the 5th module	The topic Application of GIS is added in the module as per the suggestion	Module Coordinator	Immediate
			In 60CEE42 - Industrial Waste Management, reference book "Metcalf & Eddy, Inc. Wastewater Engineering Treatment and Reuse' to be added	As per the suggestion, the corresponding book was added	Module Coordinator	Immediate

1	**Curriculum and syllabi of VII & VIII Semester – R2022**		In 60CEE46- Integrated Water Resources Management, the topic Urban waste management to be included in 3rd module	As per the suggestion the corresponding topic was included.	Module Coordinator	Immediate
			In 60CEE56- Water Quality and Management, add the topic Standard of drinking water as per IS 14543.	As per the suggestion the topic IS 14543 was included.	Module Coordinator	Immediate
			In 60CEE12- Solid and Hazardous Waste management, Energy content to be added in the 2nd module. The experiment BOD to be included	As per the suggestion the BOD experiment was included and the Energy content	Module Coordinator	Immediate
			In 60CEE16- Groundwater Engineering, the topic modelling of GW recharge pits to be added in the 2nd module.	The content Modelling topic was included in the 2nd module.	Module Coordinator	Immediate
		Dr. B. Palani Subject Expert	In 60CEE31 -Repair and Rehabilitation of Structures, the reference book "ACCE" to be changed.	The reference was changed as per the suggestion.	Module Coordinator	Immediate
			In 60CEE33 - Dynamics and Earthquake Engineering, the content behavior of reinforced cement concrete, steel and prestressed concrete structures under earthquake loading to be removed since the module to be kept with liquefaction.	As per the suggestion content was removed and liquefaction was added in the module	Module Coordinator	Immediate
			In 60CEE41- Prefabricated Structures, the reference to be replaced with NPTEL.	The NPTEL s added in the reference.	Module Coordinator	Immediate
			In 60CEE44- Intelligent Transport Systems, the NPTEL reference to be added.	As per the suggestion NPTEL was included in the reference book	Module Coordinator	Immediate
		Dr. Senthilkumar V Meritorious Alumnus	In 60CEE32 -Energy Science and Engineering, the topic Energy Audit and rating to be included.	As per the suggestion the topic Energy audit and rating was included	Module Coordinator	Immediate
			In 60CEE33- Dynamics and Earthquake Engineering, Geology and Geotechnical Engineering to be given as Prerequisite	As per the suggestion, the prerequisite is added	Module Coordinator	Immediate
			In 60CEE34 - Pavement Analysis and Design, the reference to be modified.	The reference was modified as per the suggestion	Module Coordinator	Immediate
			In 60CEE43 - Reinforced Earth and Geotextiles, the topic testing method ad mechanical properties to be added.	As per the suggestion the topic was included in the 4th module	Module Coordinator	Immediate
			In 60CEE53 – Machine Foundation, the topic Soil Stabilization to be added	The topic Soil Stabilization is added in the 3rd module as per the suggestion.	Module Coordinator	Immediate
			In 60CEE13 - Ground Improvement Techniques the text book "Principles of Geotechnical" to be added.	As per the suggestion the mentioned text book was included.	Module Coordinator	Immediate
		The necessary corrections has been updated and submitted to the Academic Council Meeting for further approval				

2.	**Revision in the Syllabi of I - IV Semester - R 2022**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert) Dr. Senthilkumar V (Meritorious Alumnus)	The curriculum and syllabi of I – IV semester of R2022 UG and PG is presented and the following suggestions were given **Suggestion given:** Dr. Ibrahim Badhusha Suggested that, in 60CEE12- Solid and Hazardous Waste management, Energy content to be added in the 2nd module. The experiment BOD to be included Dr. V. Senthil Kumar insisted that, in 60CEE13 - Ground Improvement Techniques the text book "Principles of Geotechnical" to be added. Dr. M.P. Muthuraj suggested that, in 60CEE16- Groundwater Engineering, the topic modelling of GW recharge pits to be added in the 2nd module. Dr.B.Palani suggested to have a separate theory and laboratory courses for Engineering Drawing for Civil Engineers in second semester. The order of the Electives and the courses are interchanged to incorporate the integrated courses in Elective III and the code numbers of those particular courses to be changed accordingly. All members suggested In Semester I, 60GE001 - Heritage of Tamil The following content to be added in the first Module. வாழ்வியல், பொறுப்புணர்வு, சுய ஆய்வு, மனோபாவம், தன்னம்பிக்கை, இலக்குகள், உறவுகள், தலைமைப்பண்பு, பாலின சமநிலை. Life, Responsibility, Self-exploration, Attitude, Self-confidence, Goals, Relationships, Leadership, Gender equality The reference book to be included as உயர்தல் உரிமை., ஈரோடு கதிர், முதல் பதிப்பு, சிக்ஸ் ப்ளஸ் ஒன்ட்ரெயினிங் அகாடமி, ஈரோடு, 2024 Right of Raise., Erode Kathir., : First Edition, Six Plus One Training Academy, Erode, 2024 Submitted to the Academic Council Meeting for further approval.				
3.	**Minor and Honor degree course curriculum and syllabi in R2022**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert) Dr. Senthilkumar V (Meritorious Alumnus)	Members suggested that the honors can be opt for those students who scores CGPA greater than 7.5. The following course is added as the Honors degree for R2022 60CEH01- Architecture and Town Planning 60CEH02- Traffic Engineering and Management 60CEH03- Building Services 60CEH04- Climatic Changes and Adaptation Measures 60CEH05- Application of Remote sensing and GIS in Engineering 60CEH06- Disaster Management. The syllabi of the Honors courses were discussed and same was approved	Same was approved by the Members	BoS Chairman	Continuous	Submitted for the approval of Academic Council

4.	**List of open elective courses and value-added courses offered in 2023-24 (Even Semester) and planned to offer in 2024-25 (ODD Semester)**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert) Dr. Senthilkumar V (Meritorious Alumnus)	**List of open electives and respective Syllabi were presented** The following open elective courses were offered in 2023-24 (EVEN Semester) 50CEL03- Waste Management Techniques. List of open elective courses to offer in 2024-25 (ODD semester) 60CEL02 – Climatic Changes and Adaptation Measures. Dr. Muthuraj, University Nominee suggested to offer the Climatic changes as the open elective course as the other department students can be understanding the global environmental concerns The value-added course planned to offer in the odd semester (2024-2025) for UG are 1. Architectural Design using Revit 2. Rebar and Structural Steel Detailing 3. Google Sketchup and Lumion The Board of Studies members approved the Open Elective and Value-added Courses. The List of courses has been submitted to the academic council meeting for the further approval
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert) Dr. Senthilkumar V (Meritorious Alumnus)	**I. Total No. of credits for the UG programme** The Curriculum and Syllabi of R2022 of UG and PG was Presented was Presented Proposed Curriculum of Civil Engineering (UG) R2022 is 162 credits. For M.E. Structural Engineering (PG) R2022 is 73 credits. **II. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & Crosscutting issues** Dr.M.P.Muthuraj and Dr.B.Palani appreciated that the prescribed Syllabus content of PG (M.E – Structural Engineering) are within the requirements of AICTE. Dr. M. Ibrahim Bathusha appreciated that the curriculum and syllabi is complying with GATE 2024 Syllabus. **III. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students** Dr.M.P.Muthuraj, Dr. Senthilkumar V and Dr.B.Palani discussed that the proposed R 2022 curriculum & syllabi will enrich innovative, design & critical thinking skills and problem solving abilities of students. The course Design Thinking and Innovation & Design Thinking and Product Development was introduced in the V and VI Semester **IV. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories** Dr.M.P.Muthuraj, Dr. Ibrahim Bathusha, Dr. Senthilkumar V and Dr.B.Palani suggested to have the virtual lab from the NITK Surathkal and other reputed institutions **V. New courses offered** **As per the suggestions, the new courses introduced are** 1. Design Thinking and Innovation. 2. Design Thinking and Product Development. 3. Smart Cities 4. Tall Structures 5. Green Buildings

6.	**Discussion on Choice Based Credit System**	Dr.M.P.Muthuraj (University Nominee) Dr.B.Palani (Subject Expert) Dr. Ibrahim Bathusha M (Subject Expert) Dr. Senthilkumar V (Meritorious Alumnus)	**Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (EVEN sem.) and planned to offer in ODD semester of 2024-25** **NPTEL Offered in 2023-24 (Even Sem)** • Introduction to Civil Engineering Profession. • Basic Construction materials. • Concrete Technology **NPTEL planned to offer in 2024-25 (ODD Sem)** • Municipal Solid Waste Management • Geotechnical Engineering Laboratory • Advanced Concrete Technology **II. One credit course planned to offer by industry in 2024-25(ODD semester)** One Credit courses planned to offer are • Green Buildings • Total Station Surveying • Building Valuation **III. Skill based courses offered in 2023-24(EVEN semester) and planned to offer 2024-25(ODD semester)** The following skill-based courses were planned to offer in 2024-25(ODD semester) • Coping with stress • Human Values and Ethics • Yoga for Wellness Value added courses planned to offer in 2024-25(ODD semester) • Revit Architecture • Structural and Steel Detailing • Google Sketchup and Lumion **Internship for Students (2nd, 3rd & 4th Year)** 2 Weeks-1 Credits 4 Weeks-2 credits 6 Weeks and above-3 Credit Number of Students undergone internship are 3rd Year – 22 4th Year- 35 All members suggested that the Internship is mandatory to all students and to be fulfilled by AICTE norms. All members suggested having the NPTEL as mandatory to all students. The above discussion are submitted for the approval in Academic Council Meeting for approval.

7.	**Stake holders feedback and action taken**	The following suggestions are given by stakeholders Mr.P. Thirupathi suggested in Smart Materials and Smart Structures, the topics cost and economics for smart sensors in public buildings and apartments for safety aspects against disaster to be added. Mr. V. Thangaraj suggested in Smart Materials and Smart Structures, The title Actuator can be replaced with Instrumentation and Automation system with actuator and to incorporate Bulk Magnetic flow with actuator control, Sluice valve with actuator, Pressure, special control valves with actuator, also incorporate SCADA System and Pressure Monitoring System Mr. S. P. Prabhu suggested in Solid and Hazardous waste management, The topics can be included are Modern Equipment's for waste reduction and processing, Solid waste management rules and construction, demolished waste, Processing industries waste disposal, Financing in MSWM projects – Public private partnership in MSWM Projects Dr. E.Ravi suggested in Ground Improvement Techniques to include the content Nailing Techniques and Pile Foundation. Mr.P.Vetrivel suggested in Traffic Engineering and Management to include the content Traffic Flow theory. Also Mr. R. Renugaraj suggested to Include the content PIEV theory Mr. N. P. Srinivasan suggested in Conceptual Planning and Bye laws to add the topic significance of Bye Laws in Second Module Dr.D.Sakthivel suggested in Groundwater Engineering to Include the Analog Modelling, Water Table, Contour Mapping and Sieve Analysis and case studies by providing real –world examples. Mr. S. Ganesan suggested in Groundwater Engineering to include topics on remote sensing for groundwater mapping, advanced data analytics for groundwater management. Based on the feedback received from the stakeholder the syllabi of R2022 for the particular courses are updated submitted to Academic Council meeting for the approval
8	**Suggestions from IQAC**	The courses for the minor degree are Surveying Practices, Construction Materials, Transportation Engineering, Solid Waste Management, Geotechnical Engineering and Waster Resources Engineering for the students of other branches.
9	**Any other Matters**	**Question Paper Reforms - Internal and End Semester Examination** Reforms in examination question papers for both internal assessments and end-of-semester exams can be implemented in accordance with directives from the Head of the Institute, ensuring consistency across all branches. **Suggestions and permission to start new programmes in thrust areas** Members suggested that, the courses like Artificial Intelligence in Civil Engineering, AR & VR for Civil Engineering, BIM for the beginners can be included with the approval of the institution policy **NCC as additional Credit \Waiver in R2022,2018** Members suggested adhering to the directions provided by the Head of the Institute since they are the same for all branches.

22/06/24

BoS Chairman

25/6/24

Dean/Academics

25/6/2024

Dean/Admin

Principal

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Computer Science and Business Systems

ACADEMIC YEAR 2023-2024 (ODD SEMESTER)

	BoS Meeting No:09			**Date:24.05.2024**		**Venue: CSE Department**
S.No.	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**
1.	**Curriculum and syllabi of VII & VIII Semester – R2022**	**Dr.B.Vinoth Kumar, AU Nominee** **Dr.V.Thilagavathe , Co-opted External** **Mr. D. Santhosh , Alumnus** **Ms.ManjariAnandan , Co-opted External**				
	60 CB E35 - Cryptocurrency and Blockchain Technologies	**Dr.B.Vinoth Kumar, AU Nominee**	Suggested to move last unit content to unit-4 and add applications in different sector in unit-5	Unit-5 content moved to Unit-4 and added some application topics in unit-5	Module Co-ordinator	Submit to Academic Council for further approval
	60 CB 702 - Data Science	**Ms.ManjariAnandan , Co-opted External**	Suggested Data Science Course can be titled as Data Analytics	Data Science renamed as Data Analytics	Module Co-ordinator	Submit to Academic Council for further approval
	60 CB E56 - Business Analytics	**Mr. D. Santhosh , Alumnus**	Suggested to include Power BI and Tableau in Theory and Experiments	Added Power BI concept in Unit-1 and modify first experiment using Tableau.	Module Co-ordinator	Submit to Academic Council for further approval
2.	**Revision in the Syllabi of I - VI Semester - R 2022**	**Dr.V.Thilagavathe , Co-opted External**	**61 CB 301 - Automata and Compiler Design -** Productions and derivation	In Automata and Compiler Design- Removed Topics: In Unit – 1 Productions	Module Co-ordinator	Submit to Academic Council for further approval

			topics comes under parse tree concept. Introductory ideas on Time complexity of deterministic and nondeterministic Turing machines. Already comes on Turning machine concept. Recommended to remove these topics.	and derivation In Unit - 2 Kleene's theorem, and Myhill-Nerode theorem and its uses. In Unit-5 Church-Turing thesis Introductory ideas on Time complexity of deterministic and nondeterministic Turing machines.		
3.	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018.**	**Nil**				
4.	**List of open elective courses and value-added courses**	Open Elective(Even Semester Offered) – 60 CB L01– C# and .NET Programming Open Elective(Odd Semester Planned) - 60 CB L02– Automation Testing Tools Value-added Courses (Even Semester Offered) – 1. Introduction to OS 2. Advanced MYSQL 3. Software Design and Architecture analysis Value-added Courses (Odd Semester Planned) – 1. Data analysis using PowerBI **The members of BoS approved to offer the value added courses. These courses are forwarded to Academic council for further approval.**				

5. Discussion on Curriculum of I to VIII Semester for R 2022 (UG)

I. Total No. of credits for the UG programme - 164

II. Preparation of syllabi for I to VIII semester subjects R2022 and Recommendations
- Presented the I to VIII semester Curriculum and Syllabi and it gets approved.

III. Curriculum and syllabi shall meet the Requirements to pursue higher education & Career guidance and startups & entrepreneurship & cross cutting issues

-Yes, Curriculum and syllabi meet the requirements to pursue higher education & career guidance and start-ups & entrepreneurship by offering the following courses

- Career Skill Development I, II, III, IV, & V
- Start-ups and Entrepreneurship
- Research Skill Development

IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students

- Yes, Curriculum & syllabi improves innovative, design & critical thinking skills and problem solving abilities of students

V. Virtual Laboratories & Industry sponsored / Specific Laboratories

- Planned to use virtual laboratories for Data Structures, Software Engineering.
- Planned to introduce following core and new elective courses

Core:

- C# and .NET Programming
- Cloud Application Development
- Data Analytics
- Software Testing and Automation

VI. Additional courses offered

- **Electives:**

- Python Full Stack
- MEAN Stack
- Android Application Development
- Swift Coding and App Development
- Conversational Systems
- Game Development
- Cryptocurrency and Blockchain Technologies
- Cyber Security
- Computer Vision
- Robotics Process Automation
- Cognitive Science
- Exploratory Data Analysis
- Recommender Systems
- Neural Networks and Deep Learning
- Natural Language Processing
- Virtual and Augmented Reality

6. Discussion on Choice Based Credit System

I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (Even semester) and planned to offer in Odd semester of 2024-25

- Self-study courses(NPTEL,MOOC) (2023-2024, Even Semester)
  - Cloud Computing
  - Programming , Data Structures and Algorithms Using Python
  - Programming in C
- Self-study courses (NPTEL,MOOC) proposed (2024-2025, Odd Semester)
  - Introduction to Database Systems
  - Python for Data Science
  - Natural Language Processing

II. One credit course offered in 2023-24 (Even semester) and planned to offer by industry in 2024-25(Odd semester)

- **One credit course offered in 2023-24 (Even semester)**
  - Machine Learning with MATLAB
- **One Credit Course planned to offer (2024-25 Odd Semester)**
  - MongoDB
  - UI/UX Design

III. Skill based courses offered in 2023-24(Even semester) and planned to offer 2024-25(Odd semester)

- Skill based Courses offered in 2023-24(Even semester) – Universal Human Values , Career Skill Development I , Career Skill Development III
- Skill based Courses planned to offer 2024-25(Odd semester) - Full Stack , Career Skill Development II , Career Skill Development IV

IV. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.

- Computer Programming Laboratory - Codeathon
- Data Structures Laboratory - Codeathon
- Design Thinking - Designathon
- Machine Learning Laboratory - Hackathon
- Usability Design of Software Applications Lab – Designathon

V. Evaluation & course outcome plan for integrated courses

- In integrated courses, Practical component and theory evaluated with equal weightage mark.

VI. Internship details of the students (2nd , 3rd & 4th Year)

- Students undergoing 6/8 weeks of training /doing projects in industry / academic institutions of repute shall be given 3 credits and one elective course in 7 th or 8 th semester shall be waived.

7. **Stake holders feedback and action taken**

S. No.	Name of Stake Holder	Action Taken	Course Name (changes are introduced)
1.	Mr. A.K.Maheshwaran Founder – Statix.pro	In VR Modeling included real – time rendering techniques and optimization for VR environments.	60 CB E33 - Virtual and Augmented Reality
2.	Dr.Shanmugapriya Data Scientist Indium Software - Chennai	Added Cloud Application Monitoring and management unit	60 CB 701 – Cloud Application Development
3.	Ms.Ramya Full Stack Developer Cybervault innovations & technologies Coimbatore.	Data Analytics Concept included and data science lab - 2 more experiment added.	60 CB 702 – Data Science
4.	Mr.J.Senthil AP/CSE, Sri Krishna College of Engineering and Technology, Coimbatore.	Included Blockchain models and architecture of hyperledger	60 CB E35 - Cryptocurrency and Blockchain Technologies
5.	Mr. A.Dinesh Technical Lead, TCS, Chennai	Added one experiment on Application development using Mixture model	60 CB E36 – Cognitive Science

8. **Suggestions from IQAC**

- 3 Credits can be offered to students as waivers or additional credits can be offered after occurring International certification course.
- Value Added Courses focusing on women's empowerment
  i) Women Health &Human Rights -> Coursera
  ii) Gender Equality through Inclusive Design -> Coursera
  iii) Gender Equality and Women Empowerment -> Udemy

- Minor Degree:
  a) Offering a minor degree in Machine Learning, Data Science and artificial intelligence to students of non-circuit branches like Mechatronics, Mechanical, EEE, ECE, TXT.
  Offering a minor degree in Business and Entrepreneurship to the students wants to be an entrepreneur.

9. Any other matters

I. Introduction of Tamil courses and its assessment in R2022 as Extra Credits

- Heritage of Tamils / தமிழர் மரபு
- Tamils and Technology / தமிழரும் தொழில்நுட்பமும்

II. NCC as additional Credit \Waiver in R2022, R2018

- 3 Credits can be offered to students as additional credits.

R.Gopinath

Dr.R.Gopinath
Chairman – BoS
Computer Science and Business Systems
(UG)

14/6

Dean – Academics

15/6/2022

Dean-Administration

Principal

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Computer Science and Engineering

	BoS Meeting No: 26			Date:	24.05.24	Venue:	IT Park
S. No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	**Curriculum and syllabi of VII & VIII Semester of UG courses R2022**	Dr.B.Vinoth Kumar Nominated by University	-Suggested to include Computer Vision course instead of Image Processing -Game Development Course may be included in Elective -Suggested to rename course name as Big Data to Big Data Frameworks	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	
		Ms.Manjari Anandan Industry Expert	-Suggested to include Prompt Engineering in Elective III -Deep learning may be included in VII Semester -Suggested to include Aws -Suggested to offer Javascript and JQuery as separate modules in	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	

			Advanced Web Development course				
		Mr. D. Santhosh Alumini	-Suggested to change name of module I in Human Computer Interaction course	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	
		Dr. Thilagavathe Academic Expert	-Suggested to include Sustainable courses in Elective -Micro core architecture course from course era may be given as value added course instead of elective course	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	VII semester of R2022	
2.	**Revision in the Curriculum and syllabi of I, III, V semester R2022.**	Mr. D. Santhosh Alumini	Suggested to include Hashing Techniques exercise in Data Structures laboratory	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	III semester of R2022	
		Dr. Thilagavathe Academic Expert	Suggested to revise the syllabus of 60 PCS E11 - Smart Sensors and Internet of Things	The syllabus is revised and course code is updated as 61 PCS E11 - Smart Sensors and Internet of Things.	Module Coordinator	I semester of R2022	

				The updated course is submitted to Academic Council for approval			
3.	**Minor and Honor degree course curriculum and syllabi in R2022 and R2018**	Dr.B.Vinoth Kumar Nominated by University	-Suggested to refer vertical courses in IIT -Suggested to choose 6 courses from 10 Courses in Honor degree	Suggestions are incorporated and submitted to Academic Council for approval	Module Coordinator	implemente d in R2022	
4.	**List of open elective courses and value-added courses offered in 2023-24 (Even Semester) and planned to offer in 2024-25 (ODD Semester)-**	Dr. Thilagavathe Academic Expert	- Micro core architecture course from course era may be given as value added course instead of elective course	Suggestions are incorporated and submitted to Academic Council for approval			
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)**	• To inculcate the habit of Learning by Doing/Activity Based Learning/Project Based Learning, the following changes are introduced Hands-On practices are introduced in Software Testing.					
	I. Total No. of credits for the UG programme	164					

	II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations	Curriculum of I to VIII Semester for R2022 (UG) and the syllabi of V and VI semester are finalized according to the suggestions given by BoS Members and it is resolved to submit the Syllabus with above changes to Academic council for approval.
	III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship	Yes, Curriculum and syllabi meet the requirements to pursue higher education & career guidance and startups & entrepreneurship by offering the following courses • Core Courses for GATE Preparation • Career Skill Development I, II, III, IV, & V • Start-ups and Entrepreneurship • Research Skill Development
	IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students	Yes, Curriculum & syllabi improves innovative, design & critical thinking skills and problem solving abilities of students • Innovative Design in all core labs • Questions are asked to improve Critical Thinking Skills in Tests and Tutorials • Problem solving abilities of students are improved by tutorials
	V. Virtual Laboratories & Industry sponsored / Specific Laboratories	• Planned to use virtual laboratories for Data Analytics.
	VI. New Courses Offered	• Prompt Engineering is introduced in Elective III
	Discussion on Curriculum of I to IV	

	Semester for R 2022(PG)	
	Total No. of credits for the PG programme	73
6.	**Discussion on Choice Based Credit System**	
	I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (Even Semester) and planned to offer in ODD Semester of 2024-25	NPTEL courses offered in Even semester of 2023-24 1. English Language for Competitive Exams 2. Education for Sustainable Development 3. Soft Skill Development 4. Introduction to Artificial Intelligence.
	II. One credit course offered in 2023-24 (Even Semester) and planned to offer by industry in 2024-25 (ODD Semester)	• Data Analytics using Python is planned to give one credit course

	III. Skill based courses offered in 2023-24(Even semester) and planned to offer 2024-25 (ODD Semester)	• Practical Component is introduced in few open elective and core elective courses.
	IV. International Certification completed in 2023-24 with credits	Students are encouraged to do the International Certificates such as coursera, udemy, and so on. All BoS members appreciated the credits given to the students for obtaining International Certificates
	V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.	Mini project shall be given for laboratory courses to make students to participate in Design Contests, Hackathon and Ideathon, etc.
	VI. Evaluation & course outcome plan for integrated courses, Project Based & System Based Courses	In integrated courses, Practical component shall be evaluated as a lab component
	VII. Internship details of students (2 nd , 3 rd & 4 th Year)	Students undergoing minimum 6-8 weeks of Internships in reputed industries for sharpening skill sets
7.	**Stakeholders feedback**	Refer the Attachment

	and action taken	
8.	**Suggestions from IQAC**	• 3 Credits can be offered to students as waiver or additional credits upon completion of International Certificates • Prize winners of national level/state level competitions such as Hackathon, India Skills, etc. shall be offered with 3 credits either as waiver or additional credits • One course from NPTEL shall be made mandatory for all UG programmes
9.	**Any other matters**	
	i) Question Paper Pattern – Internal and End Semester Examination	The internal and external examiners list are presented by BoS Chairman and all the members accepted the same.
	ii) Naan Mudhalvan – Value Added Course offered in Even semester 2023-24	NIL
	iii) Suggestions and permission to start new programmes in thrust areas	NIL
	iv) NCC as Waiver in R2022, R2018	Waiving is recommended

11/6/2024

11/6/24

BoS Chairman
Dr.S.Madhavi

K. S. RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE - 637 215

(Autonomous)

AGENDA for BoS Meeting

2023 – 2024 (EVEN SEMESTER)

Name of the Body	Board of Studies (BoS) Electronics and Communication Engineering - UG and PG
Meeting No	26
Date & Time	18.05.2024 & 10.30AM
Venue	ECE meeting Hall (Hybrid mode)
Meeting link	https://ksrctnet.sharepoint.com/sites/ece/Shared%20Documents/BoS%20Meeting/Recordings/BoS%20Meeting-20240518_111144-Meeting%20Recording.mp4?web=1&referrer=Teams.TEAMS-ELECTRON&referrerScenario=MeetingChicletGetLink.view.view

The list of members attended the meeting is given in **Annexure - I.** The Agenda discussed is given below:

S.No.	ITEMS
1.	**Curriculum and syllabi of VII & VIII Semester of UG courses R2022**
2.	**Revision in the Curriculum and syllabi of I, III, V semester R2022** **Revision in the Curriculum and syllabi of VII semester R 2018 of UG**
3.	**Minor and Honor degree course curriculum and syllabi in R2022**
4.	**List of open elective courses and value-added courses offered in 2023-24 (Even Semester) and planned to offer in 2024-25 (ODD Semester)**
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)** I. Total No. of credits for the UG programme II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & cross cutting issues. IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem-solving abilities of students V. Virtual Laboratories & Industry sponsored courses / Specific Laboratories VI. New courses offered
6.	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (Even Semester) and planned to offer in ODD Semester of 2024-25 II. One credit course offered in 2023-24 (Even Semester) and planned to offer by industry in 2024-25 (ODD Semester) III. Skill based courses offered in 2023-24 (Even semester) and planned to offer 2024-25 (ODD Semester) IV. International Certification completed in 2023-24 with credits V. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. VI. Evaluation &course outcome plan for integrated courses, Project Based & System Based Courses VII. Internship details of students (2^{nd} , 3^{rd} & 4^{th} Year)
7.	**Stake holders feedback and action taken**
8.	**Suggestion from IQAC**
9.	**Any other matters** • Question Paper Pattern – Internal and End Semester Examination • Naan Mudhalvan – Value Added Course offered in Even semester 2023-24 • Suggestions and permission to start new programme in thrust areas • Three credit waiver for NCC certification in R2022, R2018

Minutes of the Board of Studies Meeting
Department of ECE

	BoS Meeting No:26			Date: 18.05.2024		Venue:	ECE meeting Hall + Microsoft Teams platform
S.No.	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
The BoS Chairman welcomed all the members for the meeting. The items listed in the agenda are taken for discussion one by one. Rough draft of syllabus for VII and VIII semesters of R2022 is prepared by faculty with inputs received from different stakeholders. The same is presented for discussion in the meeting. The minutes of the meeting are as follows:							
1.	**Curriculum and syllabi of VII and VIII Semester R 2022 of ECE**	Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	Course Name: Antennas and Microwave Engineering ➢ Suggested to discuss 2 to 3 antennas instead of more antennas and include smart antennas ➢ Add antenna measurements ➢ Also suggested to have only on transit device. (TRAPATT and BARITT are removed) ➢ Recommended to add smart antennas as a Professional Elective Course	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: RF Laboratory Suggested to reframe the syllabus of this course according to the antennae given in the theory	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	Course Name: Computer Networks ➢ Multicast Routing and Multimedia may be removed as the syllabus is heavily loaded ➢ Recommended to add Multimedia as a Professional Elective Course	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-

		Dr.I.S.Akila (Nominated by University)	Course Name: Medical Imaging Systems ➢ Applications of diagnostic ultra sound may be specified ➢ Reduce the content of module 4	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	Course Name: Wireless Sensor Network Design ➢ Module 1 title may be given as Wireless Sensor Network Architecture ➢ Suggested to have 1 or 2 schedule based algorithms and routing protocols. ➢ Recommended to remove COUGAR, ACQUIRE protocols in module 2 ➢ Module 5 may be remapped and case studies may be included	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	Course Name: Satellite Communication ➢ Suggested to add recent satellites ➢ Case study related to chandrayaan in module 5 may be added	Suggestions are accepted, topics are added and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	Course Name: 5G Communication Networks ➢ Suggested to check the availability of the syllabus content in the prescribed text book ➢ Identify the suitable book and frame the syllabus accordingly ➢ suggested to refer CIT syllabus	Suggestions are accepted, syllabus is received accordingly and submitted to academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-

		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	Course Name: Artificial Intelligence ➢ Suggested to rename the title of the Module 2 as Search Algorithms ➢ Similarly, Module 3 title may be renamed as Knowledge and Reasoning ➢ Recommended that the applications of AI may be Specified in module 5	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	
		Dr.I.S.Akila (Nominated by University)	Course Name: Adhoc and Sensor Networks ➢ Suggested to include case studies ➢ Recommended to reduce the routing protocols in module 2	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	Course Name: Brain Computer Interface and its Applications Suggested to remove case studies in module 5 as the module deals with Applications of BCI	Suggestions are accepted and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Remote Sensing Suggested to reduce the content in module 3 since it is heavy	Content is reduced and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	Course Name: Advanced Wireless Communication Techniques Suggested to combine cooperative and green communication modules	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V II semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Computer Vision: Algorithms and Applications Suggested to match the lab content with theory regarding the algorithms used.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VII semester of R2022(UG)	-

		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	Courses Name: Body Area Networks ➢ The course title may be changed to Wireless Body Area Networks ➢ Suggested to refer suitable books for wireless communication technologies	Course name is changed and submitted to the academic council for further approval	Module coordinator	Syllabus of VIII semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	Course Name: Rocketry and Space Mechanics Suggested to offer as open elective	Suggestion is accepted and submitted to the academic council for further approval	Module coordinator	Syllabus of VIII semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Software Defined Networks Suggested to change the module 1 name as SDN Data Plane instead of SDN: Background and Data Plane	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VIII semester of R2022(UG)	-
2.	i) **Revision in the curriculum and Syllabi of I, III, V semester R 2022 (UG)** ii) **Revision in the Syllabi of VII Semester - R 2018 (UG)**	Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Circuit Analysis Suggested that it is not necessary to specifically mention the modern tools in the laboratory experiments as MATLAB and recommended that it may also be done using any other open source tools.	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of III semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	Course Name: Analog Communication ➢ Recommended that the experiment 1 in practical may be specific like Probability density function with respect to poisson distribution ➢ Module 4 and 5 may be swapped	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of IV semester of R2022(UG)	-

		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Machine Learning Techniques Suggested to use appropriate blooms level and provide specific database for relevant experiments	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University) Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Microcontrollers lab ➢ Suggested that the experiment 2 may be specific related to arithmetic and logical operations ➢ Experiment 6 may be done using suitable sensors	Suggestions are accepted and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council) Dr.I.S.Akila (Nominated by University)	Course Name: VLSI Lab ➢ Recommended that the experiment based on 2- or 4-bit ALU Design may be given ➢ Split the experiments and the number of experiments may be increased from 8 to 10	Suggestions are accepted, changes are done and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		All BoS members	Course Name: Digital Communication Lab Suggested that the list of experiments may be rearranged and the experiments based on line coding, delta modulation may be learnt earlier than the digital modulation systems	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-
		All BoS members	It is decided to include the core elective courses such as 50 EC E48 - Jakarta Enterprise Edition and 50 EC E49 - C# and .Net Framework in Elective 4 group of 7th semester R2018 to help the students for placement	All members accepted the changes and this will be incorporated and submitted to the academic council for further approval	BoS Chairman	Syllabus of VII semester of R2018(UG)	

3.	**Minor and Honors degree courses in R2022 and R2018**	Dr.I.S.Akila (Nominated by University)	Course Name: IoT Device Development and Integration Recommended that the case study in module 2 may be moved to the last module	Changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of minor degree courses	-
		All BoS members	Course Name: Industry 4.0 and Industrial Internet of Things Recommended that same syllabus may be followed for the minor as well as core elective for this course as the minor degree syllabus is heavily loaded	Suggestion is accepted and submitted to the academic council for further approval	Module coordinator	Syllabus of minor degree courses	-
		All BoS members	All BoS members accepted and recommended the different verticals presented for Honor Degree courses	-	-	-	
4.	**List of open elective courses and value-added courses offered in 2023-24 (Odd Semester) and planned to offer in 2023-24 (Even semester)**	All BoS members	The list of open electives and value-added courses are listed by the BoS chairman and all BoS members accepted the same	-	-	-	-

5a. Discussion on Curriculum of I to VIII Semester for R 2022 (UG)

I. **Total No. of credits for the UG programme** -162

II. **Preparation of Curriculum of I to VIII Semester for R 2022 (UG) and syllabi for VII and VIII semester courses of R2022 and Recommendations**
Curriculum of I to VIII Semester for R2022 (UG) and the syllabi of VII and VIII semesters are finalized according to the suggestions given by BoS Members above and it is resolved To submit the syllabus with above changes to Academic council for approval.

III. **Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship**

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
30.8% (GATE courses)	90% (Core and open electives) + CCD	6.9% (Start up and Entrepreneurship course)

IV. **Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students**

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
17% (ALL CORE LABS)	37% (question paper based)	46% (Tutorial courses)

V. **Virtual Laboratories & Industry sponsored / Specific Laboratories**

Name of Course with Code	Semester	Name of Institution / Open Source Tools
60 EC 5P2 - VLSI Laboratory	V	IIT Guwahati – Digital VLSI Design virtual laboratory link
60 EC 5P1 -Signal Processing Laboratory	V	IIT Kharagpur – Digital signal Processing virtual laboratory link
50 EC 7P1 – Communication and Networks laboratory	VII	IIT Bombay – Computer Networks virtual laboratory link

- IoT laboratory supported by Enthu technology Solutions India Pvt Ltd
- Electronic Circuit Design laboratory supported by Tessolve Semiconductors Pvt.Ltd

VI. **New courses offered**

Course Name		
Innovation Engineering Laboratory	Medical Imaging Systems	Computer Vision: Algorithms and Applications
RF Laboratory	Wireless Sensor Network Design	Wireless Body Area Networks
Wearable Devices	5G Communication Networks	Micro Electro Mechanical Systems
IoT Hardware	Brain Computer Interface and Applications	Rocketry and Space Mechanics
Data Science	Industrial IoT and Industry 4.0	Software Defined Networks
IoT Product Development	Remote Sensing	Biomedical Instrumentation
Wireless Broad Band Networks	Advanced Wireless Communication Techniques	

5b. Discussion on Curriculum of I to IV Semester for R2022 (PG)

I. **Total no.of credits for the PG programme** – 72

II. **Preparation of Curriculum of I to IV Semester and syllabi for R 2022 (PG) and Recommendations**

Curriculum and syllabus of I to IV Semester for R2022 (PG) are finalized according to the suggestions given by BoS Members. It is resolved to submit the syllabus with above changes to Academic council for approval.

III. **Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship**

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
47.22%	26.4%	25%

IV. **Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students**

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
34%	22%	44%

V. **New courses offered**

Course Code	Course Name	Semester
60 PVL 102	Research Methodology and IPR	I
60 PVL 103	Analog IC Design	I
60 PVL 106	Advanced Embedded Computing	I
60 PVL1P2	Analog IC Design Laboratory	I
60 PVL 201	Design for Verification using UVM	II
60 PVL 203	RF Circuit Design	II
60 PVL E15	Genetic algorithm for VLSI Design	II

60 PVL E16	Bio Signal Processing	II
60 PVL E31	DSP Structures for VLSI	III
60 PVL E32	Applied medical image processing	III
60 PVL E33	Data Science and Engineering	III
60 PVL E41	System Verilog	III
60 PVL E42	HDL for IC design	III
60 PVL E43	Deep learning	III
60 PVL E44	Adaptive Signal Processing	III

6. Discussion on Choice Based Credit System

I. **Self-study courses planned to be offered in the Even semester of 2023-24**

- NPTEL courses are given as self-study courses and they are made mandatory for all students. Faculty mentors are available with students supporting them.
- It is mandatory that all students should do two NPTEL courses during the course of study. Students have to complete the NPTEL courses before 7th semester.
- Udemy/Coursera/Certification Courses are given as self study courses.
- It is decided to offer the elective courses such as 'High Performance RISC Processor' and 'Real Time System Design' as self-study courses during 2024-25 for students with CGPA>= 9.

II. **One credit courses offered in odd semester of 2023-24 odd semester and planned to offer by industry in Even semester of 2023-24**

S.No.	Name the Course
Offered	
1	LoRa WAN Network architecture in IoT
2	VLSI design with static timing analysis
Planned	
1	Advanced data acquisition and control - LabVIEW
2	LoRa WAN Architecture

III. **Skill based courses offered in even semester of 2022-23 and planned to offer in odd semester of 2023-24.**

- MATLAB
- PCB Design
- LabVIEW
- Embedded C

IV. **International Certification completed in 2022-23 with credits**

Students are encouraged to do the International Certificates such as coursera, udemy, Edx, mathworks, Guvi and so on. All BoS members appreciated the proposal of giving credits to the students for obtaining International Certificates. They also felt that it would raise the standards of the students to meet the industry needs.

Students have completed the following Coursera courses in 2022-23 Even semester

Sl.No.	Name of the courses in coursera	Certification completed by students
1.	Python for Data science, AI and Development	28
2.	Introduction to Data Analytics	15
3.	IoT Communications	44
4.	IoT Devices	44
5.	Introduction to Artificial Intelligence	45

It is decided to give the courses in coursera that is mapped with the curriculum of R2022 courses for 3rd semester students.

V. **Roll out of laboratory classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.**

Name of Laboratory with Code R2018	Semester	Contest
Analog and Digital Electronics Laboratory	III	Open ended experiments are given which will enable the students to develop projects on their own. Students can choose any circuits/logic/ applications given in each experiment or bring circuits/logic/ applications of their choice suitable to the given experiment.
Linear Integrated Circuits and Electromagnetics Laboratory	IV	
Microcontrollers Laboratory	V	
Signal Processing Laboratory	V	
VLSI Laboratory	V	
Embedded systems Laboratory	VI	
Digital Communication Laboratory	VI	
Networks Laboratory	VII	
RF Laboratory	VII	
Electronic Design Project Laboratory	IV	Students have to design application circuits/systems using analog and digital electronic components. Circuits can be chosen from the given list of experiments but need not be confined to it.
Innovation Engineering Laboratory	VI	Students will • Diagnose; trouble shoot and extract the circuit drawing from the given PCB. • Teardown a product from the given list or on their own to find the design information, drawing of the circuit, and power requirements. • Prepare report based on the inferences.

VI. **Evaluation & course outcome plan for integrated courses, Project based & System Based Courses**

The assessment pattern for integrated courses, project-based courses are presented by BoS chairman and all the members accepted the same.

VII. **Internship for Students (2^{nd}, 3^{rd}& 4^{th} Year)**

Credits shall be given for students undergoing internship/doing projects in relevant industry and it is given below:

Duration of Training /Internship	Credits
2 Weeks	1
4 Weeks	2
6 Weeks and above	3

7. **Stake holder's feedback and action taken**

Name of the Stake Holder	Type of the stakeholder	Regulation	Course Name/General	Feedback / Suggestions	Action Taken
Mrs.S.S.TamilSelvi	Faculty	R2022	Machine Learning Techniques	➢ Suggested that the no. of experiments in the course Machine Learning Techniques may be revised from 5 to 10 covering all the algorithms mentioned in each module. ➢ Also suggested to ensure that each experiment could be done for 2 hours/week.	It is incorporated in the syllabus of semester VI.

Dr.K.B.Jayanthi		R2022	Computer Networks	➢ Suggested to refer the syllabus of CCNA and modify the course Computer Networks accordingly. ➢ Include the experiments using Packet Tracer in the Laboratory Course Networks Laboratory	It is incorporated in the syllabus of semester VII.
Dr.C.Rajasekaran		R2022	Microcontrollers and VLSI Laboratory	The Lab course Microcontrollers and VLSI Laboratory may be split into Microcontrollers lab with 1.5 credits and VLSI lab with one credit.	It is incorporated in semester V.
Vasanth thangaraju, Senior Engineer, Sify Technologies, Chennai.	Industry/Employer	R2022	5G Communication Networks	Recommended to include the topic Carrier aggression in the course 5G Communication Networks	It is incorporated in the syllabus in module 4 of the respective course in semester VII.
Shanthababu pandian, Rolan AI Product Solutions, UK.		R2022	Computer Vision: Algorithms and Applications	Suggested to include transfer learning and faster RCNN	It is incorporated in the course in module 4.
Balasubramanian, CTO, Digitwin Technologies Pvt Ltd., Chennai.		R2022	Micro Electro Mechanical Systems	Suggested to include SWCNT in sensors, batteries and transistors as part of the syllabus	It is incorporated in the same course in semester VIII, Elective V.
Prasanna, Aerospace, Bengaluru.	Alumni	R2022	Antennas and Microwave Engineering	Suggested to add Beamforming techniques	It is incorporated in the syllabus in module 3 of the same course in VII semester.

Chandrasekar J, Frontier Business Systems Private Limited, Bengaluru.		R2022	Computer Networks	➢ Suggested to include the experiments using Cisco packet tracer ➢ Suggested to Include VLAN concept in the theory part in the data link layer	It is incorporated in the same syllabus in module 2 in Semester VII.
Guhan /III year	Students	R2022	Computer Networks	Suggested to move the course Computer Networks from 7th semester to 5th or 6th semester.	The curriculum of V and VI semesters are freezed and hence this can not be done
Tarunika R S/ II Year		R2022	General	Suggested that they need change in more writing work.	All the conventional paper pen work in assignment is now replaced with activities like simulation, case study report preparation and poster presentation and so on.

All these suggestions were presented in BoS meeting and all members welcomed the suggestions and appreciated the changes incorporated.

8. Suggestions from IQAC

- Value Added Courses focusing on women's empowerment may be offered
  - i) Women Health & Human Rights through Coursera
  - ii) Gender Equality through Inclusive Design through Coursera
  - iii) Gender Equality and Women Empowerment through Udemy
- Minor Degree:
  - i) Minor degree may be offered in Machine Learning, Data Science and artificial intelligence to students of non-circuit branches like Mechatronics, Mechanical, EEE, ECE, TXT.
  - ii) Minor degree in Business and Entrepreneurship may be offered to the students wants to be an entrepreneur.

9. Any other matters

Discussion on the following matters is done in the meeting and approval received from BoS members.

- Members suggested that the quality of the Internal assessment tests and End semester examination question papers has to be maintained considering university norms.
- Regarding the introduction of Tamil courses and its assessment in R2022 as extra credits, the mark split up for the continuous assessment test for the Tamil courses are displayed by the BoS chairman and all the BoS members accepted the same.
- All members suggested to avoid the words such as definition, introduction, basics, overview and fundamentals in the syllabus.

Chairman
BoS / ECE

CHAIRMAN BOARD OF STUDIES
Department of ECE
K.S.Rangasamy College of Technology
Tiruchengode - 637 215.

Dean - Academics

20/06/2024

Dean - Administration

Principal

K.S.Rangasamy College of Technology, Tiruchengode- 637 215

(Autonomous)

Agenda for BoS Meeting

2023 – 2024 (Even Semester)

Name of the Body	Board of Studies (BoS) Electronics Engineering (VLSI Design and Technology) - UG
Date & Time	18.05.2024 & 10.30AM
Venue	ECE meeting Hall and Microsoft Teams
Meeting link	https://teams.microsoft.com/l/meetup-join/19%3a275f69696e1f4fc488d809fad6764d31%40thread.tacv2/1714821381529?context=%7b%22Tid%22%3a%22ca51afa4-43e6-4d01-9a9a-633374b0618e%22%2c%22Oid%22%3a%22f6bfd4ef-9984-42bf-99e1-6b1ee3446aeb%22%7d

The list of members attended the meeting is given in **Annexure - I.** The agenda discussed is given below:

S.No	ITEMS
1.	**Curriculum and syllabi of V & VI Semester of UG courses R2022.**
2.	**List of open elective courses planned to offer in 2024-25 (ODD Semester) - UG**
3.	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (Even Semester) and planned to offer in ODD Semester of 2024-25 II. One credit course offered in 2023-24 (Even Semester) and planned to offer by industry in 2024-25 (ODD Semester) III. Skill based courses offered in 2023-24 (Even semester) and planned to offer 2024-25 (ODD Semester) IV. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. V. Evaluation & course outcome plan for integrated courses, Project Based & System Based Courses
4.	**Stake holders feedback and action taken**
5.	**Suggestion from IQAC**
6.	**Any other matters** • Question Paper Pattern – Internal and End Semester Examination • Naan Mudhalvan – Value Added Course offered in Even semester 2023-24 • Suggestions and permission to start new programme in thrust areas

Minutes of the Board of Studies Meeting
Department of EE(VLSIDT)

				Date: 18.05.2024		Venue:	ECE meeting Hall + Microsoft Teams platform
S.No.	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
The BoS Chairman welcomed all the members for the meeting. The items listed in the agenda are taken for discussion one by one. As per the feedback received from stake holders, V and VI semesters of R2022 are framed. The minutes of the meeting are as follows:							
1a.	**Curriculum and syllabi of V and VI Semester R 2022 of EE(VLSIDT)**	Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Analog and Digital Communication ➢ Suggested to change module 2 name as pulse modulation schemes ➢ Remove module 5 and module 4 maybe extended ➢ Module 5 name can be changed as digital modulation techniques	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	Look into few topics Error control, Linear block codes and information theory related the module name				
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Verification Methodologies and Bus Architectures ➢ Suggested to change the module 1 name as UVM and TLM ➢ Remove word like introduction to and overview	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by	Course Name: Solid State Electronic Devices	Suggested changes will be incorporated and	Module coordinator	Syllabus of V semester of	-

		Academic Council)	➢ Suggested to compare module 1 and 3 and remove repeated concepts	submitted to the academic council for further approval		R2022(UG)	
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Analog VLSI Design ➢ Suggested to remove module 1 and asked to compare with linear integrated circuit syllabus and repeated topics maybe removed ➢ Module 2 maybe divided into module 1 and 2	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: ASIC Synthesis and STA ➢ Module 1 title maybe changed into ASIC design ➢ Need to Two text books	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: HDL Programming ➢ Suggested to remove words overview, Basics of and Introduction to ➢ System verilog concepts in the module 5 maybe moved into at the end of the module	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of V semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic	Course Name: FPGA Design ➢ Module 1 Name may be renamed into Digital design ➢ Module 5 name maybe	Suggested changes will be incorporated and submitted to the academic council for further	Module coordinator	Syllabus of V semester of R2022(UG)	-

		Council)	changed into related to the module content	approval			
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: Semiconductor Equipment Design and Technology ➢ Recommended to reduce the module 1 content ➢ Module 5 content maybe increased	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: System Verilog Module 2 title system verilog is enough	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-
		Dr.I.S.Akila (Nominated by University)	Course Name: Embedded Computing Suggested to remove the words overview, introduction to and basics of	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-
		Dr. P.T. Vanathi (Subject Expert Nominated by Academic Council)	Course Name: VLSI Technology Module 2 maybe started from fabrication process Need two textbooks	Suggested changes will be incorporated and submitted to the academic council for further approval	Module coordinator	Syllabus of VI semester of R2022(UG)	-

4.	**List of open elective courses and value-added courses planned to offer in 2024-25 (Odd Semester)**	All BoS members	The list of open electives and value-added courses are listed by the BoS chairman and all BoS members accepted the same.	-	-	-	-

5a. Discussion on Curriculum of I to VIII Semester for R 2022 (UG – EE (VLSIDT))

I. Total No. of credits for the UG programme -162

II. Curriculum of I to VIII Semester for R2022 (UG) and the syllabi of V and VI semesters are finalized according to the suggestions given by BoS Members above and it is resolved

III. To submit the syllabus with above changes to Academic council for approval.

IV. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship.

Higher Education (%)	Career Guidance (%)	Entrepreneurship (%)
30.8% (GATE courses)	90% (Core and open electives) + CCD	6.9% (Start up and Entrepreneurship course)

V. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem-solving abilities of students

Innovative Design (%)	Critical Thinking Skills (%)	Problem Solving Ability (%)
17% (All core labs)	37%(question paper based)	46% (Tutorial courses)

VI. Virtual Laboratories & Industry sponsored / Specific Laboratories

Name of Course with Code	Semester	Name of Institution / Open Source Tools
60 EV 5P1 - VLSI Laboratory	V	IIT Guwahati – Digital VLSI Design virtual laboratory link
60 EV 5P2 - Signal Processing Laboratory	V	IIT Kharagpur – Digital signal Processing virtual laboratory link

VII. New courses offered compared to ECE

Course Name		
Solid State Electronic Devices	Low Power VLSI Design	RTL Design and Synthesis
Analog VLSI Design	VLSI Signal Processing	Algorithms for VLSI Design Automation
ASIC Synthesis and STA	Scripting languages for VLSI design automation	DSP structures for VLSI
HDL Programming	System On Chip	RFIC Design
FPGA Design	Mixed Signal Design	Micro Electro Mechanical Systems
Data Science	Machine Learning Techniques	Deep Learning
Semiconductor Equipment Design and Technology	Nano Technology	Testing of VLSI Circuits
System Verilog	Analog IC Design	Verification Methodologies and Bus Architectures
Advanced Embedded Computing	Memory Design and Testing	VLSI Verification and Testing Laboratory
VLSI Technology	Network on Chip	Design Thinking and Product Development
Physical design of VLSI	IP based VLSI Design	Introduction to Microfabrication
Digital Image Processing	Computer Vision: Algorithms and Applications	ASIC Design
Design Thinking and Innovation	Electronic Packaging	

5b. Discussion on proposed Curriculum of I to VIII Semester for R 2022 (UG)

Total No. of credits for B.E. Electronics Engineering (VLSI Design and Technology) – 162

S.No.	Category	Credits Per Semester								Total Credits	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	2	2	-	-	-	-	-	-	**04**	**2.50**
2.	BS	7	9	4	4	-	-	-	-	**24**	**14.80**
3.	ES	10	4	3	-	-	-	-	-	**17**	**10.50**
4.	PC	-	5	14	16	18	18	12	-	**83**	**51.23**
5.	PE	-	-	-	-	3	3	6	3	**15**	**9.25**
6.	OE	-	-	-	3	3	3	-	-	**9**	**5.55**
7.	CG	-	-	-	-	-	-	2	8	**10**	**6.17**
8.	MC	-	-	-	-	-	-	-	-	-	-
9.	AC	-	-	-	-	-	-	-	-	-	-
10.	GE	-	-	-	-	-	-	-	-	-	-
Total		**19**	**20**	**21**	**23**	**24**	**24**	**20**	**11**	**162**	**100**

Note: HS- Humanities and Social Sciences including Management Courses, BS- Basic Science Courses, ES-Engineering Science Courses, PE-Professional Core Courses, PE-Professional Elective Courses, GE- General Elective Courses, OE- Open Elective Courses, CG - Career Enhancement Courses, MC- Mandatory Courses

6. Discussion on Choice Based Credit System

I. One credit courses planned to offer by industry in odd semester of 2024-25

S.No.	Name the Course
1	Computer Aided Designing Technology using ALTIUM

II. Skill based courses planned to be offered in odd semester of 2024-25.

- Electronic system design using MATLAB
- Electronic system development using LabVIEW

III. International Certification planned in 2024-25 with credits

Students are encouraged to do the International Certificates such as Coursera, Udemy, Edx, Mathworks, Guvi and so on.

IV. Roll out of laboratory classes to make students to participate in Design Contests, Hackathon and Ideathon, etc.

Name of Laboratory with Code R2018	Semester	Contest
Analog and Digital Electronics Laboratory	III	• Open ended experiments are given which will enable the students to develop projects on their own. • Students can choose any circuits/logic/ applications given in each experiment or bring circuits/logic/ applications of their choice suitable to the given experiment.
Linear Integrated Circuits and Electromagnetics Laboratory	IV	
Signal Processing Laboratory	V	

V. Evaluation & course outcome plan for integrated courses, Project based & System Based Courses

The assessment pattern for integrated courses, project-based courses are presented by BoS chairman and all the members accepted the same.

VI. Internship for Students (2nd, 3rd& 4th Year)

Credits shall be given for students undergoing internship/doing projects in relevant industry and it is given below:

Duration of Training /Internship	Credits
2 Weeks	1
Weeks	2
6 Weeks and above	3

7. Stakeholder's feedback and action taken – R2022

S.No	Name of the Stakeholder	Type of the stakeholder	Course Name/General	Feedback / Suggestions	Action Taken
1.	Andrew N V Qualcomm Ind Pvt Ltd Bengaluru	Industry/Employer	Testing of VLSI Circuits	Recommended to use the syllabus as framed	-
2.	Harisuvedha Insemi Technology Bengaluru	Industry/Employer	System Verilog	Suggested to include 1. Assertions in module4 2. Interface 3. Inheritance, polymorphism, virtual methods, shallow/deep copy etc. 4. Constraint Randomization	It is incorporated in the course.
3.	Mr.Kumar VLSI Mentros Bengaluru		FPGA Design	In case of Advanced Digital Design, asked to review "Asynchronous Sequential Circuit Design" topic. Which is not used in industry. Suggested to check for SEQ circuit design and FSM based design topics.	It is incorporated in the same course in semester V, Elective I.
4.	Vimal Raj Insemi Technology Services Pvt. Ltd. Bengaluru	Industry/Employer	Low Power VLSI Design	Recommended to use the syllabus as framed	-
5.			VLSI Signal Processing		
6.	Govarthanan Thirumurugan Bosch Global Software Technologies Pvt. Ltd. Coimbatore		Scripting languages for VLSI design automation		
7.			System On Chip		
8.	Nepolean Mani Tessolve Semiconductor Pvt Ltd Bengaluru	Alumni	Analog VLSI Design	Suggested to include semiconductor fabrication and packaging techniques	It is incorporated in the syllabus in module of the same course in VI semester Elective II.
9.	Sasirekha Mylsamy Tech Mahindra Bengaluru		Solid state Electronic Devices	Include some Next Generation Electronic devices for Spintronics, Valleytronics and Plasmonics, Organic electronic	It is incorporated in the same syllabus in module 5 in Semester V, Elective I.

All these suggestions are presented in BoS meeting and members welcomed the suggestions and appreciated the changes incorporated.

8. Suggestions from IQAC

- Value Added Courses can be given focusing on women & empowerment
- Women Health & Human Rights - Coursera
- Gender Equality through Inclusive Design - Coursera
- Gender Equality and Women Empowerment – Udemy

9. Any other matters

Discussion on the following matters is done in the meeting and approval received from BoS members.

Members suggested that

- Quality of the Internal assessment tests and End Semester Examination Question Papers has to be maintained considering university norms.
- Regarding the introduction of Tamil courses and its assessment in R2022 as extra credits, the mark split up for the continuous assessment test for the Tamil courses are displayed by the BoS chairman and all the BoS members accepted the same.
- All members suggested to avoid the words such as definition, introduction, basics, overview and fundamentals in the syllabus.

31/6/24.

Chairman
BoS / Electronics Engineering
(VLSI Design and technology

Principal

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE- 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, NewDelhi)

Minutes of the Board of Studies Meeting
Department of Electrical and Electronics Engineering (UG & PG)

	BoS Meeting No: 26			Date: 22.05.2024		Venue: HoD Chamber , Dept of EEE	
S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	Curriculum and syllabi of VII and VIII Semester UG & PG courses R2022	Dr. A. S. Wincy Pon Annal University Nominee Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert	Curriculum and Syllabi were presented and the following changes to be made based on the suggestion given by **Suggestion given :** 1. 60EE702 – e Vehicle i. Course name may not be start with lower case. Course name may be changed as Electric Mobility ii. Types of drives used in Electric Vehicle and their ratings may be included in syllabus 2. 60EE703 – Embedded Systems i. Embedded System applications may be included as practical components. ii. Boot loaded content may be included in theory content as it is important for the course 3. 60EEE31 – Wind Energy Conversion Systems Module V – Content may be added for the specified hours. 4. 60EEE33 – Substation Engineering and Substation Automation: i. Syllabus content is heavy, content may be removed. ii. Transmission and Distribution course will be added as Prerequisite for this course 5. 60EEE41 – Energy Storage Systems: i. Instead of detailed analysis, specifically mention the analysis part required for the course. 6. 60EEE42 –Batteries and its Management for Electric Vehicle: i. Module V – title may be changed as Design of BMS	Updated the same in the syllabus	BoS Chairman	Submitted for the approval of Academic Council	

			7. 60EEE44 – Power Electronics for Renewable Energy Systems:. i. Module I -Introduction to RES may be modified. ii. Module III – Title may be changed as Power Converters for Solar and Wind Energy 8. 60EEE45 – IoT for Smart Systems: i. IoT for Smart Cities and Applications may be included ii. LoRa WAN Repeated – It may be removed from the syllabus content 9. 60EEE46 –PLC and SCADA : i. Company name may not be included as syllabus content. It may be removed 10. 60EE7P1 – Electrical System Design Laboratory: i. Design Experiment may be modified as to do the design aspects 11. 60EEE51 – Hybrid Energy Technology i. Limitations may be changed to other module ii. BMS topic repeated. It will be corrected iii. Practical topic may be specified clearly 12. 60EE54 – Control of Power Electronic Circuits i. Module I - Basics in Control Systems repeated with core course. Content may be modified ii. Module II – Commands for Handling Polynomial Expression – may be modified iii. Module III – Sliding mode control Basics only specified in the syllabus content. Some more switching concept may be mentioned 13. 60EEE55 – Embedded Control for Electrical Drives: i. Embedded System Course may be included as Prerequisite for this course				
2.	**Revision in the Curriculum and Syllabi of II Semester R2022 UG & PG** **Revision in the Curriculum and Syllabi of VIII Semester R 2018 of UG**	Dr. S. Thangavel Subject Expert Mr. R.Sakthimani	Based on the recommendation of DAB meeting, revision of the following course syllabus has been discussed. **1.** 60EE304 – Electron Devices and Circuits: i. Mini Project may be removed from	All members agreed the same	BoS Chairman	Submitted for the approval of Academic Council	-

		Industry Expert Dr. K. Udhayakumar Alumni	the practical component ii. Amplifiers may be added iii. Frequency response and Differential Amplifier topics may be included **2.** 60EE301 – Electromagnetic Theory i. Changes proposed in Module V are accepted. **3.** 60PPS104 – Analysis of Power Converters i. Changes proposed in Module V are accepted.				
3.	**Minor and Honors degree courses curriculum and syllabi in R2022 and R2018**	Dr. A. S. Wincy Pon Annal University Nominee Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert	The following Honors degree courses in R2018 may be recommended. • CMOS VLSI Design • Electric Vehicle Architecture • Design of Motor and Power Converters for Electric Vehicle • Design of Electric Vehicle Charging System • Embedded System Design • Embedded C Programming The following the courses on Electric Vehicle Technology were proposed for Honors degree course in R2022 and it may be recommended. • Electric Vehicle Architecture • Design of Motor and Power Converters for Electric Vehicles • Electric Vehicle Design, Mechanics and Control • Batteries and its Management System for Electric Vehicles • Design of Electric Vehicle Charging System • Grid Integration of Electric Vehicles	All members agreed the same	BoS Chairman	Submitted for the approval of Academic Council for implementation in R2022	
4.	**List of open elective courses and value added courses offered in 2023 -24 (Even Semester) and planned to offer in 2024-25 (Odd Semester)**	Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert	**Open Electives offered:** 1. 50EEL05 – Electric vehicle **Open Elective planned to offer:** **1.** 50EEL01 – Energy Auditing and Conservation **2.** 50EEL04 – Sensor Technology **Value added courses offered:** 1. PCB Design	The same will be offered by the department for 2024-25	BoS Chairman and all faculty	Implemented in the academic Year 2023-2024 Odd Semester	

		Dr. K. Udhayakumar Alumni	2. PCB Design and IoT **Vale added courses planned to offer:** 1. Industrial Internet of Thing 2. PCB Assembly and Testing **List of open electives and respective Syllabi were presented**				
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV semester for R2022 (PG)** I. Total No. of credits for the UG programme II. Preparation of curriculum from I to VIII semester subjects R2022 and Recommendations III. Curriculum and syllabi shall meet the requirements to pursue higher education & career guidance and startups & entrepreneurship & cross cutting issues IV. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students. V. Virtual Laboratories & Industry sponsored / Specific Laboratories VI. New Courses offered	Dr. N. P. Subramaniam Subject Expert Mr. R.Sakthimani Industry Expert Dr. K. Udhayakumar Alumni	Proposed Curriculum and Syllabi of R2022 were Presented. • Total No. of credits for the UG programme is 164 • Total No. of credits for the PG progrmme is 72 • Syllabus content were reviewed • Members appreciated that the curriculum framed meets out the syllabus for GATE examination and the courses are so planned to include either practical component in the theory course or to have separate practical course with optimum credits **The new courses offered are** • Heritage of Tamils / தமிழர் மரபு • Tamils and Technology / • தமிழரும் தொழில்நுட்பமும் • Fabrication and Reverse Engineering Laboratory • Engineering Economics and Financial Accounting • Design Thinking and Innovation • Design Thinking and Product Development • Engineering Analysis Laboratory • Power System Protection and Switchgear • Control &Virtual Instrumentation Laboratory • Electrical System Design Laboratory • Electric Vehicle Architecture • Network Analysis and Synthesis • Solar Energy Systems • Design of Motor and Power Converters for Electric Vehicles • Analysis of Electrical Machines • Embedded C Programming • Electric Vehicle Design, Mechanics and Control • Substation Engineering and Substation Automation	All members agreed for the same and changes are made as per suggestion	BoS Chairman	Submitted to Academic Council for approval	

			• Embedded Processor • Internet of Things • Energy Storage Systems • Batteries and its Management System for Electric Vehicle • IoT for Smart Systems • Hybrid Energy Technology • Design of Electric Vehicle Charging System • Restructured Power Market • Control of Power Electronic Circuits • Embedded Control for Electrical Drives • Virtual Instrumentation				
6.	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023 -24 (Odd Semester) and planned to offer in Even Semester of 2023-24 II. One credit courses offered in 2023 – 24 (Odd semester) and planned to offer by industry in 2023-24 (Even semester) III. Skill based courses offered in 2023 - 24 (Odd semester) and planned to offer 23-24 (Even semester) IV. International Certification completed in 2023-24 with credits V. Roll out of laboratories classes to make students to participate in Design Contests, Hachathon and Ideathon, etc. VI. Evaluation & course outcome plan for integrated courses. VII. Internship for Students (2nd , 3rd & 4th Year)	Dr. N. P. Subramaniam Subject Expert Dr. S. Thangavel Subject Expert Mr. R.Sakthimani Industry Expert Dr. K. Udhayakumar Alumni Dr. A. S. Wincy Pon Annal University Nominee	**NPTEL Courses offered in 2023 -24 Even Semester:** 1. Introduction to Industry 4.0 And Industrial Internet of Things 2. Introduction to Internet of Things 3. Cloud Computing **NPTEL Courses planned to offer:** 1. DC Microgrid and Control System 2. Advance Power Electronics and Control 3. Microelectronics: Devices to Circuits 4. Digital Circuits 5. Power Electronics with Wide Band Gap Devices 6. Advances in UHV Transmission and Distribution 7. Introduction to Semiconductor Devices 8. Machine Learning and Deep Learning – Fundamentals and Applications 9. Phase Locked Loops 10. Power System Protection and Switchgear 11. Smart Grid: Basics to Advanced Technologies 12. Real Time Digital Signal Processing **One credit course offered in 23-24 Even semester:** 1. VLSI Design with Static Timing Analysis 2. LoRA WAN Network Architecture	Approved by all BoS Members	BoS Chairman	Submitted to Academic Council for approval	

			in IoT **One credit course Planned to offer in 24-25 Odd semester** 1. Data Acquisition and Control using LabVIEW 2. LoRA WAN Network Architecture in IoT **Skill Based courses planned to be offered in 2024-25 Odd Semester:** 1. **MATLAB Programming for Electrical Engineering** Roll out of laboratories classes to make students to participate in Design contest is identified the following courses 1. Electric Circuit Analysis Laboratory 2. Electron Devices and Circuits 3. Linear and Digital Integrated Circuits Lab 4. Embedded Systems The number of components in the assessment pattern of integrated courses has to be reduced. **Internship for Students (2nd, 3rd & 4th Year)** • 2nd Year - 15 • 3rd Year – 32 • 4th Year - 47 All members suggested that the internship is mandatory to all students and to be satisfied as per AICTE and AU norms.				
7.	**Stake holders feedback and action taken** 1. Employer 2. Parent 3. Alumni 4. Student 5. Faculty		1. 60EE701 – Power System Operation and Control : Feedback given by – C Anandakumar Assistant Professor, Sri Krishna College of Engineering and Technology, Coimbatore **Feedback -** Concentrate on weightage in blooms level in end semester examination 2. 60EE702- e Vehicles : i. Feedback given by - D.Tamilvanan Manager, Mahindra, Chennai	BoS members agreed for the same	BoS Chairman	It will be implemented from forthcoming semester	

			Feedback - ➢ Types EVs: FCEV topic may be removed ➢ Fast Charging System topic name may be changed as Fast Charging Technologies **3.** 60EE703- Embedded Systems : i. Feedback given by – Manikandan S Head Consultant at CGI Information Systems & Consultants **Feedback -** ➢ List of Practical to be added **4.** 60EEE32- EVDMC : i. Feedback given by - D.Tamilvanan Manager, Mahindra, Chennai **Feedback -** ➢ Electric Vehicle Mechanics, Electric Vehicle Control Systems, Advanced Topics in Electric Vehicle Design, Practical Applications and Projects and Case studies topics are suggested **5.** 60EEE31-.WECS : i. Feedback given by – Saravanan N T P, CMMS Engineer Abudhabi Distribution Company, Abu dhabi. **Feedback -** ➢ Suggested to modify the subject sequence as, Substation Equipment, Substation Design Development, Substation Design & Layout Engineering and Protection and Substation Automation **6.** 60EEE41- Energy Storage Systems : i. Feedback given by – Dr. R. Jaiganesh Manager, Solar Projects Evernew Energy Pvt Ltd Chennai **Feedback -** ➢ Li-Iron ferro phosphate batteries as current technologies in BSS and applications of fuel cell topic may				

			be added. 7. 60EEE42- Smart Grid : i. Feedback given by – E Selvakumar Senior Project Engineer, Siemens Energy, Inc **Feedback -** ➢ Practical part may be improved 8. 60EEE44- PE for RES : i. Feedback given by – S. Rakesh Kumar Technical Manager, HCL Technologies, Chennai **Feedback -** ➢ Role of electrical machines in renewable energy conversion may be added to provide a overall view 9. 60EEE45- IoT for Smart Systems : i. Feedback given by – Dr. K Subramanian, Technical Lead, Enthu Technology India Pvt Ltd, Chennai **Feedback -** ➢ New content like MQTT, CoAP, LPWAN-Lora, LoRAWAN may.be added 10. 60EEE51- Hybrid Energy Technology : i. Feedback given by – Dr. R. Jaiganesh Manager, Evernew Energy Pvt Ltd, Chennai **Feedback -** ➢ List out the limitations of wind and solar hybrid energy systems and limitations of BSS and BMS may be added The respective courses Syllabi were modified based on the suggestions and requirements.				
8.	**Suggestions from IQAC**		Value Added Course focusing on women's empowerment may be chosen as Gender Equality through Inclusive				-

			Design from Courseera				
9.	**Any other matters** • Question Paper Reforms – Internal and End Semester Examination • Naan Mudhalvan – Value Added Course offered in ODD semester 2023-24 • Introduction of Tamil courses and its assessment in R2022 as Extra credits • NCC as additional Credit/Waiver in R2022, R2018		• B.E Electrical and Electronics Engineering Programme for Working Professionals with 30 intake has been approved and the curriculum and the syllabi were accepted and recommended	All members agreed the same	BoS Chairman	Submitted for the approval of Academic Council for implementation in 2024-25	-
			• 10% of the Continuous Assessment questions may have GATE examination questions.				
			• Credit may be given to Naan Mudhalvan course and it may considered as extra credit				
			• Introduction of Tamil courses are appreciated				
			• PEO may be redefined • Regarding Honors degree, student may take any course irrespective of the verticals • Probability topics may be included in any one of the Mathematics courses • Regarding QP Pattern - Same pattern may be used for Internal and End Semester Exams.				-

Chairman BoS / EEE

Dean Academic 3/6/24

3/6/2024
Dean Administration

Principal

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Food Technology (UG &PG)

The Board of Studies meeting held on 22.05.2024 with the Greeting and welcome by the Board of Studies Chairman. The Chairman of BOS introduces the members to the forum.

The Chairman of Board of Studies explained the academic process followed in the Department which includes the completed Regulation, Teaching and Learning process, funded projects received and the major achievement of the Department.

The detailed discussion made by the Internal and external members as given in the agenda are given below:

	BoS Meeting No	26		Date: 22.05.2024		Venue: Swamy Vivekanandha Hall	
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	Curriculum and syllabi of VII & VIII Semester – R2022	Dr. Pugalenthi (University Nominee)	Recommend the Process Control and Instrumentation course in the VII semester elective	The Course Process control and Instrumentation is shifted to Elective based on the suggestions received from the University Nominee	Course Coordinator	Completed	-
		Dr.Prakshmaran (Subject Expert) Mr. E. Dinesh (Industry Nominee)	Member suggested to include Food Additives and Nutraceuticals in the VII semester PC	The Course Food Additives and Nutraceuticals was included in the VII Semester	Course Coordinator	Completed	-

		Dr. Pugalenthi (University Nominee) Dr. Prakshmarn (Subject Expert)	Member suggested to incorporate Food Product Design and Development, Technology of Cereals & pulse and Plantation and Spices Technology	Food Product Design and Development, Technology of Cereals & pulse and Plantation and Spices was incorporated in the curriculum	Course Coordinator	Completed	-
2.	**Revision in the Syllabi of I - VI Semester - R 2022**	Dr.Prakshmaran Associate Professor Department of Food Science and Nutrition, Periyar University, Selam	Member suggested to incorporate different drying technologies and fermented food product development	Based on the suggestion received for members different drying methods and fermented techniques incorporated.	Course Coordinator	Completed	-
		Dr. Pugalenthi, Anna University Nominee, Chennai	• Member suggested to incorporate case Studies on meat processing industries in India. • Member suggested to incorporate experiment on egg Properties and Fish Processing.	Suggestion given by the subject expert were incorporated in the syllabus	Module Coordinator	Completed	-
		E.Dinesh, Kavincare Pvt Ltd, Chennai	Member Suggested to include Few Unit Operation Calculation	Suggestion given by the subject expert were incorporated in the syllabus of food process calculation	Module Coordinator	Completed	-
		Dr. Pugalenthi (University Nominee)	Members suggested to Incorporate the Research Problem selection part and applications of statistics in	The above suggestion were discussed during standing committee meeting and the research skill development	Department Research Coordinator	Completed	-

			the in the Research Skill Development Course.	syllabus were revised based the received suggestion			
		Dr. Pugalenthi (University Nominee)	--University Nominee mentioned the importance of Reviewing the Research Paper part in the syllabus.	The above suggestion were discussed during standing committee meeting and the research skill development syllabus were revised based the received suggestion	Department Research Coordinator	Completed	
		Dr.Prakshmaran (Subject Expert)	The Subject Experts insisted the Design thinking and innovation, design thinking and product development must be department oriented.	Members suggested to incorporate in the design thinking course instant of two.	Module Coordinator	Completed	
3.	Minor and Honor degree course curriculum and syllabi in R2022 and R2018	Dr.Prakshmaran (Subject Expert)	The subject expert suggested to refine the Title of the Honor of R2022	Title of the honor course were revised mention by the subject experts.	BoS Coordinator	Completed	
4.	List of open elective courses and value-added courses	List of open Elective courses planned to offer in 2024-2025 • Nutrition and Healthy Life • Livestock's, Poultry and Fish Production Management • Food Supply Chain Management • Basics of Packaging Technology • Basis of Food Processing Technology • Food Science and nutrition List of value-added courses planned to offer in 2024-2025 • HACCP and Food Safety Testing • Sensory Evaluation of Food • VACCP(Vulnerability Assessment and Critical Control Point) & TACCP(Threat Assessment and Critical Control Point) • Coffee Processing • Technology for Millet Revolution					

		• Basic Computer Application for Food Technologist • Post Harvesting Technology in Horticulture Crops • Green Packaging Technology • 3D Printing of Food					
5.	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)	**The list of revision were made in the R2022 UG Curriculum:** List of integrated course incorporated are given bellow, 60 FT 402 - Meat, Fish and Poultry Process Technology 60 FT 305 - Food Processing and Preservation 60 FT 503 - Food Safety and Quality Control 60 FT E31 - Bioprocess Engineering 60 FT E32 - Traditional Foods 60 FT E33 - Technology of Fat and Oil 60 FT E34 - Modern Technology in Cereals, Pulses and Spices 60 FT E35 - Food Industry Waste Management					
6.	**Discussion on Choice Based Credit System**						
I	Self-study courses SWAYAM / NPTEL / MOOC courses	Dr. Pugalenthi (University Nominee) Dr. Prakshmarn (Subject Expert)	The BoS member suggested to include the following self-study courses. • Introduction to Processing Technologies • Introduction to Food Fortification Technology • Food Processing Technology and Quality of Food • Introduction to Food Processing and Preservation • Introduction to Food Science • Introduction to Food Technology	Online certification courses are appreciated by BoS members	Bos Chairman	Nil	

			• Dairy and Food Process and Products Technology				
II	One credit course	Dr. Prakshmaran (Subject Expert) Mr. E.Dinesh, Kavincare Pvt Ltd, Chennai	The BoS member suggested to include the following one credit courses. • ISO, HACCP, FoSTAG • Spray drying technology • Effluent Treatment in dairy industry • Energy Integration in Process Industries	--Nil--	Bos Chairman	Nil	
III	Skill based courses International Certification completed in 2023-24 with credits	Dr. Prakshmarn (Subject Expert) Mr. E.Dinesh, Kavincare Pvt Ltd, Chennai	The BoS member suggested to include the following Skill based courses. • HACCP • Food Regulatory Affairs • Food and Agribusiness Management	--Nil--	Bos Chairman	Nil	

		Course Name	Feedback
7.	Stake holders feedback and action taken	Downstream Processing	• Suggested to incorporate real life application
		Food Packaging Technology	• Suggested to align the course with Industry standard and emerging trends. • Teach the course with Practical Application and case studies. • Opportunities for interdisciplinary collaboration and research.
		Food Laws-Indian and International	• Suggested to incorporate legal framework governing food production and distribution.
		Cane Sugar Technology	• Include modern techniques for sugar crystallization

			• Add alternative for cane sugar
		Technology of fats and oils	• Effect of environmental condition of oil • Equipment and machineries in fat and oil processing • CIP procedure and sanitation in fat oil industries
		Food Allergy and Toxicology	• Labeling Regulation & standard for allergen in different countries
		Food Quality Assurance and Quality Control	• Include case studies and some practical quality check of products
8.	Suggestions from IQAC	**Value Added Courses focusing on women's empowerment** i) Women Health & Human Rights → Coursera ii) Gender Equality through Inclusive Design →Coursera iii) Gender Equality and Women Empowerment → Udemy **Minor Degree:** a) Offering a minor degree in Machine Learning, Data Science and artificial intelligence to students of non-circuit branches like Mechatronics, Mechanical, EEE, ECE, TXT. Offering a minor degree in Business and Entrepreneurship to the students wants to be an entrepreneur.	
9.	Any other matters	• Dr. Prakshmaran (Subject Expert) & Dr. Pugalenthi (University Nominee) Suggested to modify vision and mission of the department based on the stakeholder feedback. • Dr. Pugalenthi (University Nominee) Suggested to Internship should be completed in III year itself and to offer only in Even Semester. • Dr. Pugalenthi (University Nominee) Suggested to maintain only one Research Skill Development Course.	

20.06.24
BoS Chairman

THE HEAD
Department of Food Technology

20/6/24
Dean Academics

21/6/2024
Dean Admin

Principal

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Information Technology (UG &PG)

	BoS Meeting No	26		Date:	25.05.2024	Venue:	IT Department Library
S.No	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
1.	Curriculum and syllabi of VII & VIII Semester – R2022	**Ms.ManjariAnandan** CEO & Founder, ZHAGARAM Coimbatore (Industry Member)	In Cloud Computing, the Concept of Map Reduce & Hadoop can be reduced. AWS, Google Cloud Platform & Azure tools can be added	Both topics can be removed. AWS, Google Cloud Platform & Azure tools can be added	Faculty	Immediate	
			For Computer Graphics and Virtual reality new tools must be added	3D tools like Blender and Adobe Sketch can be used for practicals	Faculty	Immediate	
		Dr. B. Surendiran Associate Professor, Department of CSE , NIT, Puducherry (AC Member)	New Elective Courses like Generative AI, Machine Learning for Fintech, Digital Marketing, Prompt Engineering , Cyber Security related courses can be introduced.	• Instead of Distributed Component Architecture, Generative AI course can be included. • Cyber Security related courses can be added.	Faculty	Immediate	
		Mr. D. Santhosh Tech Lead, Honeywell Technology solutions, Bangalore (Alumni)	In XML web services , REST can be added	Components of web services like SOAP, WSDL, REST can be added.	Faculty	Immediate	
			Course Name can be changed for 60 IT E54 Analyzing,	Course Name can be changed as Data Science with Python	Faculty	Immediate	

<table>
<tr><td></td><td></td><td></td><td>Visualizing and Applying Data Science with python</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Dr.B.Vinoth Kumar, Professor Department of Information Technology, PSG College of Technology, Coimbatore (University Nominee)</td><td>IOT can be mentioned as IOB (Internet of Behaviour)</td><td>May be considered</td><td>Faculty</td><td>Immediate</td><td></td></tr>
<tr><td>2.</td><td>Revision in the Syllabi of I - VI Semester - R 2022</td><td>Dr.K.B.Jayanthi,
Dean, Academics</td><td>Syllabus for the course Digital Logic and Micro processor may be reduced</td><td>Content reduced as per the lecture hours.</td><td>Faculty</td><td>Immediate</td><td></td></tr>
<tr><td>3.</td><td>Minor and Honor degree course curriculum and syllabi in R2022 and R2018</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>4.</td><td>List of open elective courses and value-added courses</td><td colspan="6">List of Open Elective Courses
<table>
<tr><th>S.No.</th><th>Course Code</th><th>Course Title</th><th>Regulation</th></tr>
<tr><td>1.</td><td>50 IT L01</td><td>E-Commerce</td><td rowspan="13">R2018</td></tr>
<tr><td>2.</td><td>50 IT L02</td><td>Web Design</td></tr>
<tr><td>3.</td><td>50 IT L03</td><td>Python Programming</td></tr>
<tr><td>4.</td><td>50 IT L04</td><td>Multimedia Technologies</td></tr>
<tr><td>5.</td><td>51 IT L05</td><td>Mobile Application Development</td></tr>
<tr><td>6.</td><td>50 IT L06</td><td>Programming in Data Structures</td></tr>
<tr><td>7.</td><td>50 IT L07</td><td>Programming in C++</td></tr>
<tr><td>8.</td><td>50 IT L08</td><td>Programming in Java</td></tr>
<tr><td>9.</td><td>50 IT L09</td><td>Database Technology</td></tr>
<tr><td>10.</td><td>52 IT L10</td><td>Artificial Intelligence for Industry 4.0</td></tr>
<tr><td>11.</td><td>50 IT L11</td><td>Cyber Security</td></tr>
<tr><td>12.</td><td>50 IT L12</td><td>MERN Stack</td></tr>
<tr><td>13.</td><td>50 IT L13</td><td>C# and .NET Framework</td></tr>
<tr><td>14.</td><td>60 IT L01</td><td>Python Programming</td><td rowspan="5">R2022</td></tr>
<tr><td>15.</td><td>60 IT L02</td><td>Android App Development</td></tr>
<tr><td>16.</td><td>60 IT L03</td><td>Power BI</td></tr>
<tr><td>17.</td><td>60 IT L04</td><td>C# and .NET Framework</td></tr>
<tr><td>18.</td><td>60 IT L05</td><td>Web Design</td></tr>
</table></td><td></td></tr>
</table>

List of open elective courses planned to offer in 2024-25 Odd Semester

S.No.	Course Code	Course name	Dept.
		R 2018 – IT	
1	50 TP L01	Jakarta Enterprise Edition	ALL DEPTS
2	50 IT L01	E-Commerce	
3	50 IT L02	Web Design	
4	51 IT E11 / 50 IT L13	C# and .Net Framework	
		R 2022 – IT	
1	60 IT L04	C# and .NET Framework	ALL DEPTS
2	60 IT L05	Web Design	

Value added courses planned

2024-2025 (ODD Semester)

S.No.	Course name	Dept.	#students
1	Blockchain Specialization	IT	120

The above said Courses are approved by BoS members.

5. **Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)**

The curriculum and Syllabi is finalized. It is resolved to submit the Curriculum and syllabi with above changes to Academic council for approval.

I. Total No. of Credits = 162 (IT) (UG)

S. No.	Category	Credits Per Semester								Total Credits	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	2	2,3*	-	-	-		3	-	07	04.30
2.	BS	7	9	4	4	-		-	-	24	14.72
3.	ES	11	9	3	-	-		-	-	23	14.11
4.	PC	-	-	13	14	16	17	14	-	74	45.67
5.	PE	-	-	-	-	3	3	6	3	15	09.20
6.	OE	-	-	-	3	3	3	-	-	09	05.52
7.	CG	-	CSD I	CSD II	CSD III	CSD IV	CT	2	8	10	06.13
8.	MC	MC I	-	MC II	-	MC III	-	-	-	-	-
9.	AC	-	-	-	-	-	-	AC I	AC II	-	-
Total		20	20	20	21	22	23	25	11	162	100

II. Total No. of Credits = 72 (M. Tech (DS)) (PG)

S. No.	Category	Credits per Semester				Total Credits	Percentage %
		I	II	III	IV		
1.	RM	03	-	-	-	03	04.17
2.	PC	15	14	04	-	33	45.83
3.	PE	03	06	09	-	18	25.00
4.	CGC	-	-	06	12	18	25.00
5.	AC	AC I	AC II	-	-	-	-
Total		21	17	22	12	72	100

6. Discussion on Choice Based Credit System

Self-study courses SWAYAM / NPTEL / MOOC courses

S.No	Dept	Course Name	Credit	Semester
1	IT	Introduction of Internet of Things	3	III
2	IT	Privacy and Security in Online Social Media	3	V
3	IT	Blockchain and Its Applications	4	V

One credit course

S.No.	Dept	Name the Course	Semester	Name of the Industry	#students
1	IT	Agile Software Development using Kanban	V	Infosys	30
2	IT	Blockchain foundation	V	Infosys	30
3	IT	React Developer	V	Infosys	30

Skill based courses International Certification completed in 2023-24 with credits : Nil

Roll out of laboratories

Name of Laboratory with Code	Semester	Contest (Design Contest, Hackathon, Ideathon, etc)
60 IT 2P1 / Python Programming Laboratory	II	Codeathon
60 IT4P1 / Database Management Systems Lab	IV	Mini Project
50 IT 6P2 / Design Project Lab	VI	Hackathon, Mini Project
51 IT 6P1 / Data Science Lab	VI	Codeathon

Evaluation & course outcome plan for integrated courses Project based & System Based Courses

Assessment pattern for Theory with Laboratory integrated courses - R 2018

(UG –2021 admitted batch, R2022)

Category of Courses	Continuous Assessment	Model Exam	Assignment / tutorial / Practical Examination	Two Quizzes (Computer based MCQ type)	Activity	End Semester
Theory with Laboratory	20(T) +10(P)	0 marks	4 marks	2 marks	4 marks	50 marks

Assessment pattern for project based courses - R 2018

(UG –2021 admitted batch, R2022)

Internal Mark Component				External Mark/Model Mark Component				
CA TEST	Assignment	Quiz	Model Exam	Design Thinking/ Creativity	Problem Identification to Solution /Product Demo	Presentation	Viva	Project Report
2	2	2	1	20 Marks	50 Marks	10 Marks	10 Marks	10 Marks
60 marks	50 marks	20 marks	100 marks					
30	5	5	10	20	50	10	10	10
Total Internal Marks = 50				End Semester Marks = 50				

Internship details of students (2nd , 3rd & 4th Year)

S.No.	Dept.	IV Year (2020-2024)	III Year (2021-2025)	Total
1	IT	130	129	259

7.	**Stake holders feedback and action taken**	**Name of Stake Holder**	**Feedback / Suggestions**	**Action Taken**
		Mr. S. Gomathi Shankar, Cognizant,Chennai (Employer)	60 IT 702-Cryptography And Network Security Suggested to add some new topics.	Advanced Security Concepts added in the syllabus
		Mr.Gowtham Kandasamy Developer,Claidas Technologies,Chennai (Alumni)	60 IT 701 -Mobile Communication Suggested to add the topics for Ad Hoc networks ,VANET and Security	Added the detail concepts of Ad Hoc networks ,VANET and Security
		Mr.Sakthivel Govindhan, Full Stack Developer, DesignQubeArchitects & Interior design, Chennai (Employer)	60 IT 703 – Cloud Computing Suggested to Virtualization concepts, Architecture types, Programming paradigms and Different security constraints	Virtualization concepts, Architecture types, Programming paradigms and Different security constraints with types are added
		Mr.Sakthivel Govindhan, Full Stack Developer, DesignQubeArchitects & Interior design, Chennai (Employer)	60 IT 7P1 – Cloud Computing Laboratory Suggested to use Various software for VM creation.	Virtual machine creation using various software, Various operations in virtual machines are added.
		Mr. M. Sivakumar Cognizant,Chennai (Employer)	60 IT E54-XML Web Services Suggested to add the topic for XML based communication	Minimizing overhead in XML-based communication added
		Mr.V.K.Muthuravi, Exterro R& D Pvt Ltd,Coimbatore (Alumni)	60 IT E56 Ethical Hacking Suggested to add revised edition books	New Edition books added
		Mr.Vinoth Kumar Chinnathambi Test Engineering Manager at Maxlinear,Bengaluru (Alumni)	60 IT E55-Augmented Reality Suggested to include real time example	AR Solution for Home Renovation concept added

		Mr.Arulnidhi V S Senior Data Engineer, LTIMIND Tree, Texas, USA (Alumni)	60 IT E53 Social Network Suggested to add the topcs for Behavior analysis.	Analysis Role of Social Network in Behaviour Analysis
		Vanapreethi M Backend Developer IBM – India Software Lab Kochi, India (Alumni)	60 IT E44 – Distributed Component Architecture Suggested to add the topics for .Net Framework	Runtime-.NET Framework Class Library-ADO.NET,ASP.NET added
8.	**Suggestions from IQAC**	**Value Added Courses focusing on women's empowerment** The following Online certificate courses can be offered to the students. i) Women Health & Human Rights → Coursera ii) Gender Equality through Inclusive Design → Coursera iii) Gender Equality and Women Empowerment → Udemy **Minor Degree:** a) Suggested to offer a minor degree in Machine Learning, Data Science and artificial intelligence to the students. b) Suggested to offer a minor degree in Business and Entrepreneurship to the students wants to be an Entrepreneur.		
	Any other matters	• MLOPs can be given as one Credit or Value-added course • Suggested to offer Green Computing and Green IT courses.		

R.P
BoS Chairman

12/6/24
Dean Academics

13/6/2024
Dean Admin

Principal

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Management Studies

	BoS Meeting No:	26		Date:	17.05.2024	Venue:	FinTech Lab
S.No	**Agenda**	**Name & Nominee**	**Discussions / Suggestions**	**Action to be Taken**	**Responsibility**	**Target**	**Remarks**
1.	Curriculum and syllabi of I – IV Semester of MBA program- R2022	Dr.M.Kalpana Associate Professor, PSG College of Technology (Anna University) Nominee) Dr.S.Ganesan Head- Education Initiative Logistic Sector Skill Council (Subject Expert) Dr.N.Thamarai selvan National Institute of Technology Tiruchirappalli (Subject Expert) Mr.C.Ram Senior Manager- HR	The discussion was held for the following aspects: BOS Chairmen briefed the whole curriculum 1.The BOS Member Mr.C.Ram suggested to combine the summer internship and Main project in a same organization if possible 2. The Corporate Social Responsibility and Sustainability course can be converted as integrated course and the practical aspect can be done through block field method 3. The Seminar subject need not be on Principles of management. Instead, the Seminar can be on any one of the core course like International Business	BoS members agreed with present R 2022 Curriculum as Presented 1.BoS chairman explained the practical difficulty involved in that process. Many Industries do not allow the students to continue their internship along with projects 2. This suggestion will be implemented in the forthcoming new regulation 3. It is decided to implement the changes in the forthcoming new regulation R2025.	- HoD & all Faculty members HoD & all Faculty members	- 2025-26 2025-26	

		JSW Steel Limited (Industry Expert) Mr.Janakirama n Sakthivel Zonal Sales Manager, Equitas Small Finance Bank Limited, (Industry Expert) Mr.Manickavel Sundarrajan Manager- Delivery Operations, Tiger Analytics (Alumnus)	Management. 4. In Semester IV of the R 2022 program, students currently undertake 2 core courses and 2 elective courses for 45 days, followed by a 45-day Main Project. BOS Members have suggested reversing this sequence, sending the students for the Main Project first, and then teaching the 2 core courses and 2 elective courses.	4. For the forthcoming 2023-25 Batch the above suggestion will be implemented in R 2022	HoD & all Faculty members	**2024-25**	
2.	Revision in the Syllabi of I - III Semester - R 2022		1. As per Stakeholders suggestion following suggestions were discussed for various subjects 60 MB 3M1 – Brand Management - brand architecture, Brand authenticity, and transparency 60 MB 3M2 - Advertising and Sales Promotion: Copy decision - Creativity in ads – Copy testing 60 MB 3M4 - Retail Management: Visual Merchandising, Stock Replenishment 60 MB 3M5– Digital Marketing: Google My Business, Local SEO, Video ads, App installs, Shopping ads, Mobile Marketing and automation, Quora, Threads, Reddit, Recent social media campaign of MNCs	1.All the BoS Members have accepted the changes suggested by the stakeholders	HoD and Faculty Members	2024-25	

			60 MB 3M6 - Sales and Distribution Management: Planning Process, Channel Management, Channel Information System 60MB 3O1- Total Quality Management: Smart Factories, Augmented Reality in Quality Management. 60 MB 3O2 – Production Planning and Control: Exponential Smoothening Method, Characteristics, Benefits of Group Technology, Stages in Group Technology Manufacture 60MB 3O4- World Class Manufacturing: Industrial IoT, Smart Factories using Robotics, Data Analytics 60 MB 3H1- Industrial Relation and Labour Welfare: Health and Safety of Employees. 60MB 3H3 – HR Analytics: Equal Employment Opportunity – Exit Interview & Feedback Mechanism 60 MB 3H4 – Labour Laws: The Equal Remuneration Act, 1976and the Code On Wages Act, 2019. 60 MB 3H5- Strategic Human Resource Management : The performance impact of human resource practices and assessment of human resource Utilization in strategic human resource management. 60 MB 3F1 – Security Analysis and Portfolio Management: Macroeconomic trends, Applications of AI & machine learning techniques in security analysis, Cyber security threats and its implications for				

			portfolio management 60 MB 3F5 – Behavioral Finance: Definition of arbitrageur - Long-short trades - Risk vs. Horizon - Transaction costs and short-selling costs - Fundamental risk - Noise-trader risk - Professional arbitrage - Destabilizing informed trading 60 MB 3F6 - Mergers, Acquisitions and Restructuring: ESG factors, Insider trading regulations, cultural alignment - leadership transitions - IT systems integration and workforce restructuring. 2. The BoS member Mr. C. Ram suggested a proposal to include advanced Excel in the Data Analytics Lab I. 3. The BoS member Mr. C. Ram suggested a proposal to include The Orange Software in the laboratory.	2.All the members accepted the change and the suggestion will be included in Data Analytics Lab I 3. All the members accepted the change and the suggestion will be included in Data Analytics Lab II	HoD and Faculty Members HoD and Faculty Members	2024-25 2024-25	
3.	**List of open elective courses and value-added courses offered in 2023-24 (Even Semester) and planned**		1.Discussion about the open elective courses such as Web Technology, and Artificial Intelligence in all domains was held.	The members suggested to offer Tally, Cryptocurrency, Block Chain, R-programming, and Artificial Intelligence for value-added course.	HoD and Faculty Members	2024-25	

	to offer in 2024-25 (Odd semester)		2.Life skill-based value-added courses are suggested by members	2.Yoga for youth empowerment will be offered	HoD and Faculty Members	2024-25	
4.	**Discussion on Curriculum of I to IV Semester for R 2022(PG)** I. Total No. of credits for the MBA II. Curriculum and syllabi shall meet the requirements for career guidance and startups & entrepreneurship. III. Curriculum & syilabi should improve the innovative, design & critical thinking skills and problem-solving abilities of students IV. New courses offered		1.Discussion about R 2022 - total credits of 100 was held 2. Discussion about R 2022 Curriculum and syllabi shall meet the requirements for career guidance and startups & entrepreneurship, innovative thinking and problem-solving abilities of students 3. Discussion about new courses such as Design Thinking, AI based courses was held	1. BoS members agreed the total credits without any change 2. BoS members agreed the R 2022 Curriculum and syllabi meet the requirements for career guidance and startup & entrepreneurship problem-solving abilities of students 3. It is decided to include AI topics in the possible subjects under R2022.	- - HoD and Faculty Members	- - 2024-25	
5.	**Discussion on Choice Based Credit System** I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (Even semester) and planned to offer in ODD semester of 2024-25 II. Skill based & value added courses planned to offer in even semester of 2024-25 III. Evaluation & course outcome plan for integrated courses		1.Discussed about the possibility of offering NPTEL courses as self-study courses was held 2. Discussed about the possibility of offering skill based value added courses such as AI in Management, Python, Business Analytics and Advanced Excel 3. Discussed about evaluation pattern of integrated courses	Artificial Intelligence in Management will be offered during 2024-25 batch 2. AI in Management can be offered 3. The following courses are integrated courses 61 MB NF1 E-Business Models	HoD and Faculty Members HoD and Faculty Members HoD and Faculty Members	2024-25 2024-25 2024-25	

	IV. Internship for Students		4.Discussed about the opportunity for Student to do foreign internships	61 MB NF2 Entrepreneurship Development 60 MB NF3 Personal Financing 60 MB NF4 Event Management -All the integrated courses consist of 30 hours of Theory and 30 hours of practical The theoretical aspect consists of two continuous Assessment Tests, 2 Assignments, 2 Quizzes -Practical aspect consist of 5 to 10 Business related activities 4. Foreign internships will be encouraged through international MoUs with organisations.	HoD and Faculty Members	2024-25	

5.	**Stake holder's feedback and action taken**		Discussion about the stakeholder's feedback was held. The Alumni suggested to include Practical oriented courses in the curriculum The employer suggested to have more internship for students	The BoS Chairman clarified that there are 4 practical oriented courses are already in the curriculum. Besides even in theory courses the practical components are embedded. The BoS chairman clarified that in R2022 curriculum there is 30 days mandatory curriculum in the end of the second semester. Besides, students are allowed to do more internship in leading organizations.	- -	- -	
6.	**Any other matters**		1. BoS Members the reviewed Vision, Mission Program Educational Objectives, Program Objectives of the department 2. Discussed about proposed the 5 days FDP Programmes on "Enhancing Research Paper and Case Study Writing for Top Tier publications" from 21st to 25th May 2024.	1.All the BoS members agreed with the present Vision, Mission Program Educational Objectives, Program Objectives of the department 2. The members appreciated the department for the initiative.	HoD & FDP Coordinator	2023-24	

			3. A discussion about the orientation for the forthcoming I MBA was held	3. It is decided to offer 15 days orientation program to the first-year MBA students (2024-26 batch) during July month	HoD & SIP Coordinator	2024-25	

30/5/2024

BoS Chairman

25/6/24

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of the Board of Studies Meeting

Department of Mechatronics Engineering

(UG-MECHATRONICS ENGINEERING & PG-INDUSTRIAL SAFETY ENGINEERING)

	BoS Meeting No	26		Date:	21/05/24	Venue:	Homi.J Bhabha Hall, Aditya Block

S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	Curriculum and syllabi of VII & VIII Semester – R2022	Dr.S.Selvi (University Nominee)	R2022 (UG-MCT) – VII & VIII semester curriculum and syllabus is presented. • In 60 MC 701-Robotics Engineering, in module-4: Actuators and Control, Motion control algorithms topic to be added. • In 60 MC 703 – Automation in Automobile, module-5 may be reframed and recent topic to be included. Also the include the text book related to the course. • In 60 MC E56- Container Logistics, content related to Ship to be append.	R2022 Curriculum and syllabi of Semester -V & VI is approved by BoS Member. In all the courses necessary corrections are carried out and the same was updated in the corresponding syllabi and Submitted to Academic Council Meeting for further approval.	Module Coordinator	Immediate	

20/5/24

S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
	Curriculum and syllabi of VII & VIII Semester – R2022	Dr.M.Bharathiraja (Subject Expert)	• 60 MC E41 - Design of Robotic Elements, Robot Design topic to be include. • In 60 MC E53- Aerodynamics of Drones, Mapping with Program Outcomes to be check. • In 60 MC E35 -Product Design and Costing, Work study and Ergonomics Module has to be reframe. • 60 MC E52- Smart Mobility and Intelligent Vehicles, Connected Autonomous Vehicle topic to be changed as Comfort Systems.	As per the members inputs, the same is append in the syllabi.	Module Coordinator	The same was incorporated in R2022 for the batch admitted in the year :2022-2023 onwards.	
		Dr.P.Ravichandran (Subject Expert)	• In 60 MC E46 - Process Planning and Cost Estimation, modules may be restructured. • In 60 MC E54- AI/ML for Manufacturing, Industry 4.0 has to be included in last module. • 60 MC E51- Robotic Welding Technology, Seam welding to added in module-II.	All the suggestion is carried out and it is updated in the syllabi	Module Coordinator	The same was incorporated in R2022 for the batch admitted in the year :2022-2023 onwards.	

S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
2.	Revision in the Curriculum and syllabi of I, III, V semester R2022 Revision in the Curriculum and syllabi of VII semester R 2018 of UG.	Dr.S.Selvi (University Nominee)	In 60 MC 302 – Sensors and Instrumentation, Instrumentation related content to be added.	The necessary Corrections have been made as per the suggestions and submitted to academic council meeting for further approval.	Module Coordinator	The same was incorporated in R2022 for the batch admitted in the year :2023-2024 onwards.	
3.	Minor and Honor degree course curriculum and syllabi in R2018 & R2022.	Dr.S.Selvi (University Nominee)	Discussions made on curriculum & Syllabi of Honor degree. The members suggested to proceed. Honors Degree – Robotics and Automation with following courses 60 MC H01 – Medical Robotics 60 MC H02 - AI for Robotics 60 MC H03 - Robot Kinematics and Dynamics 60 MC H04 - Applied and Industrial Robotics 60 MC H05 - Robotic Programming	The syllabi has been submitted to academic council meeting for further approval.	Module Coordinator		

S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
4.	List of open elective courses and value-added courses offered in 2023-24 (Even Semester) and planned to offer in 2024-25 (ODD Semester)-	Dr.S.Selvi (University Nominee)	• 50 MC L12-Safety Measures for Engineers & 60 MC L006-Safety and Risk Analytics are the courses planned to offer as an open elective courses in ODD Semester (2024-2025) Open Elective syllabi was discussed and the same was approved by Bos Experts • In 2024 -2025 (ODD Semester) Value-added course: Autodesk Fusion 360 is planned to offer	Members of BoS approved to proceed the list of courses has been forwarded to Academic Council for further approval.		Immediate	
5.	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022 (PG)	• The members suggested that Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & cross cutting issues. • Also Curriculum & syllabi provides innovative, design & critical thinking skills and problem solving abilities of students • Also the members suggested to add more number of Virtual Laboratories & Industry sponsored courses \ Specific Laboratories Presented by BoS Chairman and Same was approved by BoS experts • Total Number of Credits : 163, The curriculum and syllabi approved by BoS members has been forwarded to Academic Council for further approval.					
6.	Discussion on Choice Based Credit System	Following NPTEL Courses were taken by students in 2023-2024 (EVEN Semester) I. Mechatronics (UG-MCT) – 8 Weeks II. Fundamental of welding Science & Technology (UG-MCT) – 8 Weeks III. Manufacturing Automation (UG-MCT) – 4 Weeks IV. Safety and Risk Analytics(PG-ISE) – 12 Weeks V. Cognitive Ergonomics(PG-ISE) – 4 Weeks					

S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
		• In ODD Semester of 2024-2025 the below courses are suggested I. Foundation of Cognitive Robotics(UG-MCT) – 4 Weeks II. Introduction to Machine Learning(UG-MCT) – 8 Weeks III. Automation in Manufacturing(UG-MCT) – 12 Weeks IV. Robotics (UG-MCT) – 8 Weeks V. Ergonomic Workplace Analysis (PG-ISE) – 4 Weeks **One Credit Course** - Planned to offer course (ODD Semester) on topic **"Digital Twin Technology"** and MOU was Signed with PRAYA LABS, Tiruvanamalai. It is planned to offer MATLAB & LabVIEW as skill based courses was planned in forth coming semester In 3rd year-40 Students & 4th Year -39 students were completed the internship				
7.	Stake Holders Feedback And Action Taken	(1) S. Gunasekaran, Senior Software Engineer (ROS), Katomaran Technologies Pvt Ltd, In 60 MC 702 – Embedded System - IOT related projects can be added to the syllabus & also add new Microcontrollers which was used industries. (2) Shanmugasundaram, Senior Manager, Power Train – Manufacturing Engineering. Kalaiyarasu Krishnamoorthi In 60 MC E44 – Design for Manufacturing, Design for Quality and Tolerance Analysis module – Collaborative Design Platforms with cloud – based software tools has to be include. (3) N. Chandru, Alumni (Batch 2018-2022) – Suggested in 60 MC E55 Rapid Prototyping – APQP & PPAP may be included. (4) V.Vijayan, Engineer ATP/Production / 161. BHEL, Trichy In 60 MC E51 – Robotic Welding Technology, Welding Inspection and Quality Control may be added. (5) R.Saravanan, Engineer, Engineer Design Division, Sundram Fasteners Limited, Hosur. In 60 MC E54 AI/ML Manufacturing, Industrial visit shall be arranged to enhance students' knowledge. The above Stake holders suggestion was incorporated in the syllabi and the same was approved by BoS experts				

S. No.	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
8.	Suggestions from IQAC	Value Added Courses focusing on women's empowerment i) Women Health & Human Rights through Coursera ii) Gender Equality through Inclusive Design through Coursera iii) Gender Equality and Women Empowerment through Udemy **Minor Degree**: Offering a minor degree in Machine Learning, Data Science and Artificial Intelligence to students of non-circuit branches like Mechatronics, Mechanical, EEE, ECE, TXT. Offering a minor degree in Business and Entrepreneurship to the students who wants to be an entrepreneur.					
9.	Any other Matters	The members suggested to follow academic calendar as per Anna University guidelines. NCC as additional Credit \Waiver in R2022 & R2018 are discussed with BoS experts and the same was approved.					

BoS Chairman 20/6/24.

CHAIRMAN
Board Of Studies/
Mechatronics Engineering

Dean - Academics 20/6/24

Dean – Admin 20/06/2024

PRINCIPAL 21.06.24

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE – 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of Board of Studies Meeting

Department of Mechanical Engineering

24.05.2024

BoS Meeting No.: **26** Meeting Date: **21.05.2024** Venue: **Board room & MS Teams (https://rb.gy/tenp4)**

Agenda:

Vision, Mission, PEO, PSO of Mechanical Engineering

Discussion/Suggestion:

Vision, Mission, PEO, PSO of Mechanical Engineering programme were presented and discussed among the members.

Vision: To be a leader in providing skill sets for globally competent Engineers, Researchers, Entrepreneurs and Managers in Mechanical Engineering domain.

Mission:

- To offer quality education through experiential learning using ICT tools and socially –relevant projects.
- To engage Faculty and Students in fundamental, heavy engineering and applied research related to energy, environment and safety concerns.
- To groom students to venture into successful entrepreneurs and managers

Program Educational Objectives (PEOs)

PEO1: **Professional Competency**: Graduates of the programme will adapt to emerging technological challenges with core competence in mechanical engineering domain.

PEO2: **Employability and Entrepreneurship**: Graduate of the programme will exhibit their technical knowledge and skills to secure suitable positions in technological organizations and to become entrepreneurs

PEO3: **Higher Education and Research**: Graduates of the programme will pursue advanced studies in thrust areas of mechanical engineering to carryout scientific and industrial research to meet/satisfy current requirements in respective sectors ethically.

Programme Specific Outcomes (PSOs): Engineering Graduates will be able to:

PSO1: Use modern tools in the design, analysis and manufacturing of mechanical components and systems.

PSO2: Solve multidisciplinary problems in manufacturing and allied industries.

PSO3: Adopt creative and innovative approaches to address real- time industrial challenges

Action to be taken:

It was resolved to continue the above mentioned Vision Mission, PEO and PSO of the Mechanical Engineering programme.

K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE – 637 215

(An Autonomous Institution, Affiliated to Anna University, Chennai, Approved by AICTE, New Delhi)

Minutes of Board of Studies Meeting

Department of Mechanical Engineering

24.05.2024

S. No.	BoS Meeting No.: **26**			Date: **21.05.2024**	Venue: **Board room & MS Teams (https://rb.gy/tenp4)**		
	Agenda	**Name & Nominee**	**Discussion/Suggestion**	**Action to be taken**	**Responsibility**	**Target**	**Rem.**
1.	**Curriculum and syllabi of VII & VIII Semester of UG courses R2022**	Dr.S.Selvi, University Nominee & Mr Sureshkumar Perumalsamy Industry Expert	- **60 ME 701 Machine Learning**: Suggested to include linear regression content in the syllabus.	- Based on the suggestion, the content has been included in the syllabus. - It is resolved to submit the content to Academic Council for further approval.	Ms.S.Srinithi	immediate	-
		Dr.S.Selvi, University Nominee & Dr.P.K.Rajesh Academic Expert	- **60 ME 702 Mechatronics and Robotics:** Suggested to include Electrical actuators and insisted to specify the sensors.	- As per the suggestion, the actuators and sensors have been included in the syllabus. - It is resolved to submit the content to Academic Council for further approval.	Dr.M.Ravi/ MCT	immediate	-
	Curriculum and syllabi of VII & VIII Semester of UG courses R2022	Dr.S.Selvi, University Nominee & Dr.K.Shanmugasundaram Academic Expert	- **60 ME 703- Operations Research:** Suggested to incorporate inventory model and Queuing model content in the course.	- As per the suggestion from the members, the contents were revised. - It is resolved to submit the content to Academic Council for further approval.	Mr.S.Karthikeyan	immediate	-

	Curriculum and syllabi of VII & VIII Semester of UG courses R2022	Dr.S.Selvi, University Nominee & Dr.K.Shanmugasundaram Academic Expert	- **60 ME 7P1 Mechatronics Laboratory**: Insisted to rearrange the experiments. Also, insisted to include the traffic light control system experiment.	- The laboratory experiments were rearranged as per the suggestion given by the experts. - Submitted to Academic Council for approval	Dr.M.Ravi/ MCT	immediate	-
		Dr.S.Selvi, University Nominee & Mr Sureshkumar Perumalsamy Industry Expert	- **60 ME E41-Industrial Tribology:** Suggested to include the contents 'ball bearing' and 'remote maintenance' contents in the course to get exposure in the sensor based monitoring of temperature and vibration of machine components.	- Based on the suggestion given by the expert members, the contents have been included in the syllabus. - It is resolved to submit the content to Academic Council for further approval.	Dr.K.Santhanam	immediate	-
		Mr Sureshkumar Perumalsamy Industry Expert & Dr.K.Shanmugasundaram Academic Expert	- **60 ME E42- Non-Destructive Evaluation of Materials**: Suggested to emphasize on iridium and cobalt based techniques rather than x-ray.	- Based on the suggestion, the contents were revised. - Submitted to Academic Council for approval	Mr.P.Tamilarasu	immediate	-
		Dr.S.Selvi, University Nominee & Mr.Daniel Robert Alumni	- **60 ME E51 Lean Manufacturing**: Suggested to replace the content 'Ford and Toyota production system' with 'Evolution of lean manufacturing in production system' in the 1st module - Lean Production Systems.	- The content suggested by the member has been included in the Syllabus. - It is resolved to submit the content to Academic Council for further approval.	Mr.S.Karthikeyan	immediate	-

		Dr.S.Selvi, University Nominee & Mr.Daniel Robert Alumni	- Also, insisted to include 'fault tree analysis' in the 3rd module Organizational and Logistic Element and 'Advantages of lean manufacturing system' in the 5th module Metrics Element and Implementing Lean.	- As per the suggestion from the members, the contents were revised. - It is resolved to submit the content to Academic Council for further approval.	Mr.S.Karthikeyan	immediate	-
		Mr Sureshkumar Perumalsamy Industry Expert & Dr.K.Shanmugasundaram Academic Expert	- **60 ME E55 Maintenance Engineering**: Suggested to include predictive maintenance in the 3rd module - Maintenance Systems	- As per the suggestion, the contents were updated in the syllabus. - It is resolved to submit the content to Academic Council for further approval.	Dr. G.Venkatachalam	immediate	-
		Mr Sureshkumar Perumalsamy Industry Expert & Dr.P.K.Rajesh Academic Experts	- **60 ME E56 - Industrial Safety Engineering**: Suggested to include pollution control norms and electrical safety norms in the 5th module (Safety Regulation and Certifications).	- Based on the suggestion, the contents were included. - It is resolved to submit the content to Academic Council for further approval.	Mr.M.Sanjay/ MCT	immediate	-
2	**Revision in the Curriculum and syllabi of I to VI semester R2022**	Mr Sureshkumar Perumalsamy Industry Expert & Mr.Daniel Robert Alumni	- **60 ME 406 Applied Hydraulics and Pneumatics**: Suggested to offer either pneumatic or hydraulic circuit in the laboratory experiments as same components were used in both of the cases.	- The experiments were revised and rearranged as per the suggestion from the experts. - It is resolved to submit the content to Academic Council for further approval.	Dr.P.R.Senthilmurugan/ MCT	immediate	-

		Mr Sureshkumar Perumalsamy Industry Expert & Dr.K.Shanmugasundaram Academic Expert	**60 ME E22 Design of Jigs, Fixtures and Press Tools:** Suggested to replace the content 'six point location' with "Basic principle of location" in the 1st module - Locating and Clamping Principles of Jigs and Fixtures.	- Based on the suggestion, the contents were replaced. - It is resolved to submit the content to Academic Council for further approval.	Dr.P.S.Sampath	immediate	-
		Dr.S.Selvi, University Nominee & Dr.P.K.Rajesh Academic Expert	- **60 ME E25 Internal Combustion Engines:** Suggested to include 'Data Acquisition System' in 5th module - Alternate Combustion and Data Acquisition System	- As per the suggestion, the contents were revised. - It is resolved to submit the content to Academic Council for further approval.	Dr.K.Raja	immediate	-
		Mr Sureshkumar Perumalsamy Industry Expert & Dr.S.Selvi, University Nominee	- **60 ME E26 Process Planning and Cost Estimation:** Suggested to include cost in the lab experiments since the course is offered as integrated course. - Also, insisted to restructure the 4th (Production Cost Estimation) and 5th module (Machining Time Calculation).	- As per the suggestion, the cost calculation were included in the laboratory experiments and contents were restructured. - It is resolved to submit the content to Academic Council for further approval.	Mr.S.Venkatesan	immediate	-
		Dr.S.Selvi, University Nominee & Mr Sureshkumar Perumalsamy Industry Expert	- **60 ME 501 Automobile Engineering:** Suggested to include "prime mover" in the content as it is heart of the automotive vehicles.	- The prime mover content was included in the course based on the suggestion given by the experts.	Dr.K.Raja	immediate	-

3.	**Minor and Honour degree courses curriculum and syllabi in R2022** **Discussion/Suggestion:** - Proposed curriculum and syllabi for the Honours Degree were presented and the suggestions were sought by the BoS Chaiman. The list of courses are as follows: • 50 ME H01/60 ME H01 - Reverse Engineering • 50 ME H02/60 ME H02 - Optimization Techniques in Design • 50 ME H03/60 ME H03 - Integrated Product Development • 50 ME H04/60 ME H04 - Micro and Precision Engineering • 50 ME H05/60 ME H05 - Quality Engineering • 50 ME H06/60 ME H06 - Surface Engineering - MoU with MACBRO Technology, Erode may be planned to offer Honours degree in Design and the courses under this degree programme are to be accommodated from 5 to 7 semesters. **Action Taken:** - The curriculum and syllabi of Honours Degree programme presented by the BoS Chairman were passed in the meeting and submitted to Academic Council for approval.
4.	**List of open elective courses offered in 2023-24(EVEN Semester)** - The following open elective courses were offered in 2023-24 (EVEN Semester) • 50 ME L08 Reliability Engineering • 50 ME L10 Power Generation Engineering • 60 ME L07 Green Energy Sources **List of open elective courses to offer in 2024-25 (ODD semester)** **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee & Mr.Sureshkumar Perumalsamy, Industry Expert, suggested to offer open elective courses which attract other department students that to useful for the skill development and placement. **Action Taken:** - Based on the discussion, the members approved to offer the following open elective courses in 2024-25 (ODD semester) • 50 ME L05 Logistics Management • 50 ME L11 Composite Materials and Processing • 50 ME L12 Direct Digital Manufacturing - It is resolved to submit the syllabi to Academic Council for further approval.

	List of value-added courses offered in 2023-24 (EVEN Semester) and planned to offer in 2024-25 (ODD semester) - The following value added courses were offered in 2023-24 (EVEN Semester) • CATIA V 5 with GD & T **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee, Dr.P,K,Rajesh, Academic Expert, Mr.Daniel Robert, Alumni suggested to offer industry related value added courses to suit the current requirements. **Action Taken:** - It is proposed to offer the following value added courses from 2023-24 academic year onwards. • Fusion 360 • ANSYS/CFD • GD &T • Reverse Engineering - It is resolved to submit the proposal to Academic Council for further approval.
5.	**Discussion on Curriculum of I to VIII Semester for R 2022 (UG)** **I. Total No. of credits for the UG programme** **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee, Mr Sureshkumar Perumalsamy and other members have gone through the proposed curriculum of Mechanical Engineering (UG) under Regulation R 2022. **Action Taken:** - As per the discussions, it is resolved to continue with 164 credits for B.E Mechanical Engineering in R2022 and ssubmitted to Academic Council for approval.
	II. Curriculum and syllabi shall meet the requirements to pursue higher education, career guidance, Startups & Entrepreneurship & Crosscutting issues - Dr.P.K.Rajesh and Dr.K.Shanmugasundaram, Academic Expert appreciated that the R 2022 curriculum of the Mechanical Engineering programme will meet the requirements to pursue higher education & carrier guidance and startups & entrepreneurship as well.
	III. Curriculum & syllabi should improve innovative, design & critical thinking skills and problem solving abilities of students - Dr.S.Selvi and Mr Sureshkumar Perumalsamy, Industry Expert appreciated that the proposed R 2022 curriculum & syllabi will enrich innovative, design & critical thinking skills and problem solving abilities of students.

	IV. Virtual Laboratories & Industry sponsored courses \ Specific Laboratories **Discussion/Suggestion:** - Dr.S.Selvi, University Nominee, & Dr.P.K.Rajesh, Academic Expert suggested to continue with virtual laboratory contents available in web platform of premier institute. - It is resolved to submit the proposal for the approval in Academic Council.
	V. New courses offered **Discussion/Suggestion:** - Members suggested to focus on current trends in Mechanical Engineering which will be useful for placement, higher studies and entrepreneurship. **Action Taken:** - Based on the suggestion from the members and focused on the latest technology in Mechanical Engineering following new courses are introduced compared with R 2018 for betterment of placement, higher studies and entrepreneurship. 1. Fabrication and Reverse Engineering Laboratory 2. Drafting practice 3. Piping Design 4. Industrial Tribology 5. Manufacturing Information System 6. Additive Manufacturing 7. Precision Engineering 8. Energy Conservation in HVAC System 9. Design Thinking and Innovation 10. Design Thinking and Product Development 11. Machine Learning - It is resolved to submit the proposal to Academic Council for approval and will be implemented in the R 2022.
6	**Discussion on Choice Based Credit System** **I. Self-study courses SWAYAM / NPTEL / MOOC courses offered in 2023-24 (EVEN sem.) and planned to offer in ODD semester of 2024-25** **Discussion/Suggestion:** - Dr.K.Shanmugasundaram, & Dr.P.K.Rajesh, Academic Expert suggested to offer self-study courses from 3rd semester onwards with one course per semester. - The following courses were completed by both faculty and students under NPTEL during 2023-24 (EVEN semester) • Innovation by Design • Principles of Casting Technology

- Manufacturing Guidelines for Product Design
- Privacy and Security in online social media
- Understanding Design

- In line with curriculum of R 2022/R 2018, student can opt for the NPTEL and ICT academy courses based upon the industry needs.
- It is resolved to submit for the approval in Academic Council.

II. One credit course offered in 2023-24 (EVEN Semester) and planned to offer by industry in 2024-25(ODD semester)

- The following value added courses were offered in 2023-24 (EVEN Semester)
  - Weldability of Materials

Discussion/Suggestion:

- Mr.Sureshkumar Perumalsamy and Dr.S.Selvi, University Nominee suggested to offer one credit courses from 5th semester onwards that to one course per semester.

Action Taken:

- We are planning to conduct the following one credit courses in 2024-25(ODD semester)
  - Welding Engineering
  - Welding Processes
  - 3 D Printing
  - Non -Destructive Testing
  - GD & T
- The knowledge of industry person is effectively utilized to enrich the skill of students in order to promote employability.
- The one credit courses are submitted to Academic Council for further approval.

III. Skill based courses offered in 2023-24(EVEN semester) and planned to offer 2024-25(ODD semester)

Discussion/Suggestion:

- Members suggested to offer the skill based courses that will improve the technical skill of the students. The following skill based courses were planned to offer in 2024-25(ODD semester)
  1. Communication skill
  2. Critical Thinking
- Value added –Life skill courses
  1. Yoga for Human Excellence
  2. Youth Empowerment and skill

Action Taken:

- The list of courses are submitted to Academic Council for further approval.

	IV. Roll out of laboratories classes to make students to participate in Design Contests, Hackathon and Ideathon, etc. **Discussion/Suggestion:** - Dr.K.Shanmugasundaram, Dr.P.K.Rajesh and Mr Daniel Robert, Alumni insisted to motivate the students to participate the more number of hackathon, design contests and Ideathon etc. to improve the knowledge and skill development which could be useful for placement activities and higher studies.
	V. Evaluation & course outcome plan for integrated courses, Projects based & System Based Courses. **Discussion/Suggestion:** - As per the suggestion, it is decided to proceed with existing process for evaluation & course outcome plan for integrated courses. - Submitted for the approval in Academic Council.
	VI. Internship details of students (2nd , 3rd & 4th Year) **Discussion/Suggestion:** - BoS members suggested to undergo internship from 3rd semester onwards offered by core companies during summer and winter vacations. - Students were completed the internship during 2023-24 academic year.(123 students –final year;03 students-pre final year) Submitted for the approval in Academic Council.
7	**Stake holders feedback and action taken** **Discussion/Suggestion:** The following stake holders (Employer, Alumni, Faculty and Students) have given the feedback related to curriculum design and development. - Mr.S. Arjun, Alumni suggested to have Hands on session in Radiography and visual inspection for the course Non-Destructive Evaluation of Materials. - Mr.Abishek M, Alumni, suggested to emphasize Ultrasonic testing in the course Non-Destructive Evaluation of Materials. - Mr.Karthikeyan P V, Alumni Suggested to incorporate Safety and repair contents in Quality Control and Reliability Engineering. - Mr.Jothivenkateswaran, Alumni suggested to include Ergnomics contents in Quality Control and Reliability Engineering. - Mr.Sudhir R Y, Alumni, Alstom Transport India Limited, Bengaluru suggested to include Machining of bearings and calculation in the course Industrial Tribology. - Mr.Sundaram E, Employer, Raja Industries, Coimbatore, suggested to include 'Duct design and installation' contents in Energy Conservation in HVAC System. - Sakthivel M, Employer, SUN Tech Industies, Coimbatore, Aesthetics and infiltration content in Energy Conservation in HVAC System. **Action Taken:** - Based on the suggestion from stake holder, the contents of course were revised and submitted to Academic Council for further approval.

8	**Suggestions from IQAC** - The following Value added courses may be planned to focus on women's empowerment i) Women Health & Human Rights through Coursera ii) Gender Equality through Inclusive Design through Coursera iii) Gender Equality and Women Empowerment through Udemy **Minor Degree:** - Minor degree in Machine Learning, Data Science and artificial intelligence to students of non-circuit branches like Mechatronics, Mechanical, EEE, ECE, TXT. - Offering a minor degree in Business and Entrepreneurship supports the students who aspires to be an entrepreneur. The suggestion given by the IQAC is submitted to standing committee and Academic Council for further approval.
9	**Any other matters** **Question Paper Reforms - Internal and End Semester Examination** - Examination pattern can be followed as per the directions from the Head of the Institute since it is common for all the branches.
	Suggestions and permission to start new programmes in thrust areas - Short term certificate courses which suit current industry requirements(industry sponsored courses) may be started (E.g. Robotics and Automation) - Submitted for the approval in Academic Council.
	NCC as additional Credit/Waiver in R2022,2018 - Members suggested to follow as per the directions from the Head of the Institute since it is common for all the branches.

BoS Chairman **Dean/Academics** **Dean/Admin.** 20/06/2024 **Principal** 20/06/2024

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Minutes of the Board of Studies Meeting

Department of Textile Technology (UG &PG)

	BoS Meeting No	26	Date:	21.05.2024	Venue:	M.S.Swaminathan Hall	
S.No	Agenda	Name & Nominee	Discussions / Suggestions	Action to be Taken	Responsibility	Target	Remarks
1.	Curriculum and syllabi of VII & VIII Semester – R2022	Dr.V.Ramesh Babu Subject expert	Garment Manufacturing Technology I & II may be merged as one course	Other members have suggested that since the students are primarily Textile Technologists. subjects like Garment Manufacturing Technology I and II should be included in the curriculum because they are essential for placement.	Module Coordinator	28.05.2024	
2.	Revision in the Syllabi of I - VI Semester - R 2022	Dr.P.Ganesan Subject expert	Suggested to alter the module as Production sequence in the yarn manufacturing process	Accepted and Modified	Module Coordinator	28.05.2024	
3.	Minor and Honor degree course curriculum and syllabi in R2022 and R2018	Dr.V.Ramesh Babu Subject expert	Member suggested that Honors degree courses should either be in the same verticals as the Electives or in separate verticals.	It was confirmed that the vertical for the Honors degree is separate and it was accepted as it is	Programme Coordinator	28.05.2024	
4.	List of open elective courses and value-added courses	Value-added or certification courses can be offered to students, which will enable them to earn income through work-from-home opportunities (especially for female students).					
5.	Discussion on Curriculum of I to VIII Semester for R 2022 (UG) and I to IV Semester for R 2022(PG)	Dr. Pugalenthi, University Nominee,	Member Suggested that an appropriate title should be given instead of common titles like "Design thinking and product development" & "Design thinking and innovation laboratory.	Asper the guidelines from institution, it was decided to implement the common syllabi for Design thinking and innovation laboratory & Design thinking and product development laboratory			
		Mr. P. Karnan, Industry Expert,	Member suggested to introduce sustainability and Circular Economy in Professional Core syllabi.	Suggestion was accepted and Incorporated in the syllabi			

		Dr. Ramesh Babu, Subject Expert,	Suggested to change the title of the Financial Management in Textile and Apparel Industry course.	Suggestion was accepted and the Title is **Financial Strategies in Textile and Apparel Industry**
		Dr. P. Ganesan, Subject Expert,	i. Recommended include course on Fibres and Polymers. ii. In the Research Methodology and IPR course, topics on the Design of Experiments can be added	i. The M.Tech. curriculum already includes "Fibres and Polymers" in the course "Characterisation of Textile Polymers." ii. The M.Tech. curriculum already includes "Design of Experiments" in the course "Statistical Application in Textile Engineering."
6.	Discussion on Choice Based Credit System	The BoS members appreciated the encouragement given to students and faculty members for registering for NPTEL courses. Rollout of laboratories – The BoS members accepted that the laboratory courses offered will enhance the skills of the students, enabling them to participate in various competitions like Learnathon and Skillathon		
7.	Stake holders feedback and action taken	BoS members accepted the suggestion given by the Stake holders		
8.	Suggestions from IQAC	Value Added Courses focusing on women's empowerment a) Women Health & Human Rights (Coursera) b) Gender Equality through Inclusive Design (Coursera) c) Gender Equality and Women Empowerment (Udemy) Minor Degree: d) Offering a minor degree in Machine Learning, Data Science and artificial intelligence e) Offering a minor degree in Business and Entrepreneurship to the students wants to be an entrepreneur.		
9.	Any other matters	Members have suggested to update the PSO, PEO and PO mappings in the next regulations.		

12/6/24
BOS Chairman

12/6/24
Dean Academic

13/6/24
Dean Admin

13/6/24
Principal