SCHOOL OF ELECTRICAL AND ELECTRONICS

Minutes of Board of Studies Meeting held on 28th NOVEMBER 2020

(Virtual Meeting conducted on Zoom Platform (Time: 10.30 a.m. to 12 noon)

- Dr.N.M.Nandhitha, Prof. & Dean School of Electrical and Electronics started the meeting by welcoming both the external and the internal numbers to the Board of Studies meeting (28.11.2020, 10.00 a.m. to 12.00 noon)

- Dr.T.Ravi, Head, Dept. of Electronics and Communication Engineering informed the board that core competencies are identified from the feedback obtained from the students, faculty, Alumni and employers.

- Dr.P.Kavipriya proposed to remove the following topics in Electronic Circuits I (3rd Semester) course: 'Approximate Model- Analysis of CE, CC and CB amplifiers using Approximate model equivalent circuits to obtain gain, input impedance and output impedance'. Dr.M.D.Selvaraj, Associate Professor, IIITDM accepted the changes and suggested to include Frequency response of the Differential amplifier in unit V instead of power supply and amplifiers.

- Dr.S.Lakshmi suggested to introduce 'Antenna for 5G application and Software Tools for Antenna Design and Analysis' in the course Antenna and Wave Propagation. Dr.N.Sivakumaran, Prof.,NIT, Trichy accepted the inclusion and also suggested to introduce simulation through HFSS in the class.

- Dr.M.Sumathi suggested to include the topics Li-Fi in the course Optical Communications. Dr.N.Shivakumaran accepted and suggested to remove WDM, SONET/SDH, ATM,IP over WDM.

- Dr.Sugadev presented the syllabus revision for 'Embedded Processors'.Board accepted the change and Mr.J.Visweswaran suggested to include System on Chip concept in the syllabus.

- Syllabus revision proposed in 'High Performance Computing' by Dr.Dr.S.Poorna Pushpa Kala was accepted by Dr.M.D.Selvaraj.

- Dr.S.Barani suggested to remove 'Basics of Spark-Programming in Scala'for the course 'Real Time Data Analytics'. Mr.J.Visweswaran accepted the changes and

suggested to include function programming in Scala. Dr.N.Sivakumaran suggested to include Case studies on influx and Grafana.

- Having discussed the revisions in the existing courses, faculty then presented the syllabus for the new courses. Dr.P.Chitra presented the syllabus for Digital Image Processing for Real Time Applications and Deep Learning Neural Networks. Dr.M.D.Selvaraj accepted the syllabus for both the courses.

- Dr.M.Sugadev presented the syllabus for 5G communication. Dr.N.Sivakumaran suggested to include mmWave communication in the syllabus.

- Dr,S.Poornapushpakala presented the syllabus for Machine Learning using Python. Mr.Visweswaran suggested that Least Squares Optimization, Collaborative Filtering and related topics can be included.

- Dr.S.Barani presented the syllabus for IoT for Real time Applications. Dr.N.Sivakumaran accepted the syllabus and he suggested that students can be made to do miniprojects in this course.

- Dr.M.Sugadev presented the syllabus for Drone Electronics. Syllabus was accepted by the board and Dr.M.D.Selvaraj suggested that this course can be offered to all branches of Engineering.

- Dr.P.Kavipriya presented the syllabus for Industrial Internet of Things. Mr.Visweeswaran suggested that Middleware Software protocol can be included.

- Dr.S.lakshmi presented the syllabus for eHealth and Dr.N.Sivakumaran suggested that mobile application development for biomedical applications can be included as part of the syllabus.

- Dr.N.M.Nandhitha informed the Board that part of the syllabus in SEC1320 Embedded Systems will be delivered by the industry expert so as to make the students understand the applications of embedded systems in industries. Mr.J.Visweswaran appreciated the initiative and suggested that at least one course in each semester can be identified for partial delivery of syllabus by expert from industry.

Table 1. Revision Carried out in the courses

SL NO	COURSE CODE	COURSE NAME	DELETED TOPICS	ADDED TOPICS
1	SECA1307	ELECTRONIC CIRCUITS I	**UNIT 5** Linear mode power supply - Rectifiers - Half-Wave Rectifier - Full-Wave Rectifier - Filters-L,C, LC, CLC Filter-Regulators -Zener Diode regulator- Linear series, shunt voltage Regulators - Switched mode power supply (SMPS) – Large Signal Amplifiers – Class A, Class B, Class C, Class D- Distortion	**UNIT 5** Current sources for biasing – Current steering circuits – Current mirror with improved performance (Cascode mirror, Wilson, Widlar). Large and small signal operation of Differential pair circuit Differential pair with active load

			in power amplifiers	
2	SECA1505	ANTENNA AND WAVE PROGRAGATION	**UNIT 5** Anechoic Chamber-Radiation Pattern Measurement-Gain measurement-Beamwidth and Directivity Measurement-Impedance Measurement - Measurement of radiation efficiency- Ionospheric measurements - Vertical incidence measurements of the ionosphere - Relation between oblique and vertical incidence transmission - System Issues – antenna noise.	**UNIT 5** Concepts and Benefits of Smart antennas - Fixed weight beamforming-Adaptive beamforming – Design of Planar array antennas for Beamforming applications – Feed techniques for Planar arrays - Role of Smart Antennas in Green Communications and 5G wireless communications – Software Tools for Antenna Design and Analysis
3	SEC1407	OPTICAL COMMUNICATIONS	**UNIT 5** Applications- Military	**UNIT 3** Vertical cavity surface emitting laser,Resonant cavity enhancement **UNIT 5** Optical OFDM, High-speed Light-Waveguides, Reconfigurable optical add/drop multiplexer, Light-Fidelity (Li-Fi) Technology-Introduction, working principle, Comparison of Li-Fi and Wi-Fi, Li-Fi networks, Applications.Case study: Evaluation of building a Fiber Optic network
4	SECA3019	EMBEDDED PROCESSORS	**UNIT 5** Introduction - fixed and floating point –Core architecture of ADSP218X-Arithmetic Logic Unit (ALU) – Multiplier and Accumulator (MAC) Unit- Barrel Shifter-Data Address Generator (DAG)- Program Sequencer-Functional Diagram of TMS320C54XX.	**UNIT 5** Introduction to ARM CORTEX series, improvement over classical series and advantages for embedded system design. CORTEX A, CORTEX M, CORTEX R processors series, versions, features and applications, need of operating system in developing complex applications in embedded system, Firmware development for ARM Cortex, Survey of CORTEX M3 based controllers, its features and comparison
5	SECA7020	HIGH PERFORMANCE COMPUTING	**UNIT 4** Intrusion Detection and Prevention, Intrusion Risks, Security Policy, Monitoring and Reporting of Traffics, Traffic Shaping, Investigating and Verifying Detected Intrusions,	**UNIT 4** Scheduling Parallel Jobs on Clusters, Parallel Programming Models, Parallel and High Performance programming

			<mark>Reporting and Documenting Intrusions.</mark> **UNIT- 5** <mark>Define the Types of Intrusion Prevention Systems, Intrusion Prevention System Basics, and Limitations of Intrusion Prevention System, Spoof Prevention, Denial of Service (DoS), and Quality of Service (QoS) Policy, Web Application Firewall, Packet Signature and Analysis.</mark>	<mark>languages, Dependence Analysis of Data arrays</mark> **UNIT- 5** <mark>Quantum computing and its issues</mark>
6	SECA7023	REAL TIME DATA ANALYTICS	**UNIT 1** <mark>Basics of Spark-Programming in Scala</mark>	**UNIT 1** <mark>Expressions-Functions – Classes- File I/O – Exceptions – Combining</mark> UNIT-2 <mark>Distributed Storage-Parallelism, Regression. Classification and Clustering with Spark</mark> UNIT-4 <mark>Kafka Architecture and Components, Kafka Cluster, Kafka Producer, Kafka Consumer</mark>

- Dr.Lalithakumari.S, suggested few modifications in the course 'Industrial Unit Operations'. She proposed the inclusion of topics leaching and extraction. It has been accepted by Dr.Sivakumaran, and he suggested to include the same along with mixing and separation unit operations. Dr. D.Marshiana suggested that 'Humidification, de-humidification' can be added. Dr. Sivakumaran agreed for the inclusion.

- Dr.Lalithakumari presented the syllabus for an elective course 'Optimal Control Systems'. Dr.Sivakumaran accepted the syllabus change suggested that students may be asked to do mini projects in this course.

COURSE CODE	COURSE NAME	DELETED TOPICS	INCLUDED TOPICS
SEIA1402	Industrial Unit Operations	--	Unit-4 Humidification, De-humidification Unit-2 Leaching and extraction

- Dr.V.Sivachidambaranathan,Prof.&Head,Dept.ofElectricalandElectronicsEngineerin grequested the board to shift the course "Applied Thermodynamics" to elective. Dr.M.D.Selvaraj accepted the suggestions.

- Dr.A.Ramesh babu and Dr.S.D.Sundar Singh Jebaseelanputforth the syllabus of the new courses, 'Modern Power Converters'and'Distributed Generation and Microgridss'for the approval of the board. Dr N Sivakumaran approved the Syllabus for these new courses.

- BoS members are happy that the new and the revised courses enhance employability/ Entrepreneurship/Skills of the students.

EXTERNAL MEMBERS:

1. Dr.N.Sivakumaran
2. Dr.M.D.Selvaraj
3. Mr.J.Visweswaran

INTERNAL MEMBERS:

1. Dr.N.M.Nandhitha
2. Dr.T.Ravi
3. Dr.P.Chitra
4. Dr.S.Barani
5. Dr.S.Poornapushpakala.
6. Dr.M.Sumathi
7. Dr.S.Lakshmi
8. Dr.P.Kavipriya
9. Dr M Sugadev
10. Dr .E.Anna Devi
11. Ms.S.Yogalakshmi
12. Dr.LalithaKumari.S
13. Dr.Pandian.R
14. Dr.Marshiana.D
15. Dr.V.Sivachidambaranathan
16. Dr.D.Susitra
17. Dr.R.Vanitha
18. Mrs.D.Ramya
19. Mrs.P.Sivagami