MINUTES

Name of the meeting: Board of Studies

of:

held on 20/04/2012., at 9:30 A.M./P.M. under the chairmanship of Sri Dr. Habibullah Khan.

at: Faculty Conference Hall - E-104

The Board of studies Meeting of ECE Department held on 20/04/12. at 9:30AM. In Faculty Conference hall E-104.

The following Members attend the Meeting.

1. Dr. Habibullah Khan - Chairman (BOS) H.Khan
2. Dr. N.V.S.N Sarma. - Member NVSNSarma
   (Professor in ECE NIT, Warangal)
3. Dr. N. Madhavi Latha - Member M. Madhavi Latha
   HOD. Dept. of ECE
   JNTU - Hyderabad
4. Dr. T.V. Rama Krishna. - DCC-chairman TV Rama Krishna
   Assoc. Dean School of Electrical Sciences.
5. Prof. N. Venkat Ram -
6. Prof. M.S.G. Prasad. - Member M. Prasad
7. Dr. K.S Ramesh. - Member K.S. Ramesh 21/4
8. Dr. S. Lakshmi Narayana - Member S. Lakshminarayana 21/4/12.
9. Dr. K. Sarat Kumar. - Member ~~Not~~ O.D.
10. Dr. Malaya Kumar Hota - Member
11. Dr. K.S.N. Murthy. - Member. K.S.N. Murthy
12. Prof. B. Sadasiva Rao - Member
13. Prof. Ch. V. Rama Rao - Member
14. Mr. D.S. Ram Kiran - Member.

1) It is resolved to approve the modification suggested for the course of sig

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15. Mr. B.T.P. Madhavi. - Member 20/4/12

16. Mr. G. Rakesh Chowdary, - Member 20/4

17. Mr. K. Rajendra Prasad. - Member 20/4/12

18. Dr. D. Venkat Ratnam - DCC. Member D. VRatnam 20/4/2012

19. Dr. Fazal Noor Basha. - DCC Member 20/4/2012

20. Prof. Ch. Srinivasu. - DCC Member G.G - 20/4/12

21. M. Venkata Narayana member

22. T. Govardhani - 20/4/12

23. ~~B.T.P Madhavi~~ - ~~Special Invitee~~ 20/4/12

24. ~~Dr. M. Madhavi~~

11) It is resolved to approve the modification suggested for the course of signal analysis

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Minutes of the meeting of BOS of ECE department

The BOS meeting of ECE department was held on 20/04/12 at 9:30AM in ECE faculty conference hall.
The following resolutions are made

1. It is recommended the course structure for B.Tech (ECE) for year 2011-15.
2. It is recommended the syllabus for II/IV B.Tech (ECE), 1st and 2nd semester for year 2011-15.
3. It is recommended the course structure and syllabus for M.Tech (C R & VLSI) for year 2012-12.
4. It is recommended the syllabus of mobile and cellular communication for IV/IV B.Tech (ECE), 2nd semester.
5. It is recommended the syllabus of Design for testability for IV/IV B.Tech (ECE), 1st semester.
6. It is resolved that to accept the modification of content in the syllabus of Network Analyses (11ES212) for II/IV B.Tech (ECE) for year 2011-12.
7. It is resolved to accept the modification of content in the syllabus of Basic Digital Systems (11EC210) for II/iv B.Tech (ECE) for year 2011-2015.
8. It is resolved to accept the modification of content in the syllabus of Design of Electronic systems(11EC201)for II/IV B.Tech (ECE)for academic year(2011-15)
9. It is resolved to accept the modification of content in the syllabus of Systems"(11EC203)for II/Iv B.Tech (ECE)for year 2011-15.
10. It is recommended to the syllabus of Analog circuits Analysis(11EC205)for II/IV 2nd semester for the year 2011-15
11. It is recommended to the syllabus of power supplies power amplifier (11EC204)for II/IV 2nd semester for the year 2011-15
12. It is recommended to the syllabus of Analog Communication (11EC207)for II/IV 2nd semester for the year 2011-15
13. It is recommended to the syllabus of CMOS VLSI Design (11EC206)for II/IV 2nd sernester for the year 2011-15

Chairman
Board of Studies in ECE
KL University

MINUTES

Name of the meeting: Internal board of studies
of: ECE dept
held on 29/11/2012 at 10:30 A.M./P.M. under the chairmanship of ~~Sri~~ Dr. Habibulla Khan
at: Dept library, ECE dept

The Internal Board of studies of ECE dept was held on 29/11/12 at 10.30 AM in dept library

The following members attended the meeting

1. Dr. Habibulla Khan — H. Khan
2. Dr. S. Lakshmi Narayana — S. Lakshmi Narayana
3. Dr. T. V. Rama Krishna
4. Prof M. S. G. Prasad — M. S. G. Prasad
5. Dr. V. Rajesh
6. Dr. P. Srinivasa Babu — 29/11/2012
7. Dr. K. S. N. Murthy
8. Dr. B. Sadasiva Rao — B.
9. Dr. M. Venugopal Rao
10. Dr. A. V. Pratap Kumar
11. Dr. R. Satish Kumar — R. Satish Kumar
12. Dr. T. V. S. P Gupta.
13. Sri. B. T. P Madhav
14. Dr. K. Sarat Kumar

MINUTES OF BOS MEETING OF ECE DEPARTMENT

The Internal BOS meeting was held in the department library at 1:30PM on 29/11/2012.

The following resolutions are made:

In view of the anomalies observed in two subjects: 1. Power supplies and power amplifiers

2. Analog Circuits Analysis

1. It is felt that modifications are to be incorporated in the above two subjects. After detailed discussions, all the members of the BOS committee unanimously formulated and approved the modified syllabus for the above two subjects.
2. A copy of the revised syllabus is here with enclosed along with the old syllabus.
3. It is resolved to implement the revised syllabus of the above two subjects and list of practicals of the 2nd year 2nd semester ECE students with immediate effect.
4. List of practicals for the above two syllabus is finalized and approved unanimously.

BOS-CHAIRMAN
Dept.of - ECE

MINUTES

Name of the meeting: Board of Studies

of:

held on 27/12/2012, at 3:30 A.M./P.M. under the chairmanship of Sri Dr. Habibulla Khan

at: HOD Chamber, ECE dept.

The board of studies meeting of ECE department was held on 27/12/12 at 3:30 PM in ECE HOD Room

The following members were present.

1) Dr. Habibulla Khan — BOS chairman — H. Khan
2) Dr. M. Madhavi Latha — External member — M. Madhavi Latha
3) Dr TV Rama Krishna — Member — TV
4) Prof H.S.G. Prasad — " — HSG Prasad
5) Dr. V. Rajesh — V. Rajesh
6) Dr. P. Srinivasa Rao — P. Srinivasa Rao
7) Dr. K.S.N. Murthy — KSN
8) Dr. B. Sadasiva Rao — B
9) Dr. M. Venugopal Rao — M. Venugopal Rao
10) Dr. A.V. Pratap Kumar — A.V. Pratap Kumar
11) Dr. T.V.S.P. Gupta — TVSP Gupta
12) Dr. K. Sarat Kumar — K. Sarat Kumar
13) Dr. K.S. Ramesh — K.S. Ramesh
14) Sri. B.T.P Madhav. — B

17. It is resolved to approve the modification suggested for the course of signal analysis

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It is resolved to accept the modifications suggested by all the members for the subjects (1) Linear Ic's and power supplies (2) Analog Circuit analysis for which the earlier syllabus framed was felt difficult by the students.

Chairman
Board of Studies in ECE
KL University

MINUTES

Name of the meeting: Board of studies
of: ECE dept
held on 8/1/13 2013, at 3:00 A.M./P.M. under the chairmanship of Sri Dr. Habibulla Khan
at: HOD's Chamber, ECE dept.

The Bos meeting of ECE dept was held on 8/1/13 at 3:00 pm in ECE HOD Chamber to finalize the course structure and syllubus for M.Tech by research specilization.

The following members were present

1) Dr. Habibulla Khan
2) Dr. M. Madhavi Latha — Absent.
3) D.s Ram Kiran – member –
4) Dr. P.S. Srinivas Babu
5) Dr. K. Sarat Kumar
6) Dr. Fatal Nooryaha
7) Prof. CH. SRINIVASU
8. prof MSG Prasad
9. Dr. TVS. Prasad Gupta
10 Dr K & N. Murthy
11. Dr. V. RAJESH
12. Dr. M. Venu Gopala Rao
13. Dr TV RAMA KRISHNA
14 Dr. K.S. Ramesh
15 L. Rajendra Prasad
16. Dr. R. SATHISHKUMAR

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It is resolved to approve the 4-semester structure for M.Tech by research program.

It is resolved to approve Dr. R. Satish Kumar as Guide for the existing M.Tech by research students.

Chairman
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MINUTES

Name of the meeting: Board of Studies.

of:

held on 07/06/2013, at 9:30 A.M./P.M. under the chairmanship of Sri Dr. Habibulla Khan

at: principal Conference hall.

The Board of Studies meeting of ECE Dept held on 07/06/2013 at 9:30A.M @ principal Conference hall.

The following members attended the meeting.

1. Dr. Habibulla Khan - Chairman (BOS) - HC
2. DY. M. Madhavi Latha - member. - M. Madhavi Latha
   professor in ECE, JNTU, Hyderabad
3. Dr. N.V.S.N. Sarma - Member. -
   professor, in ECE, NIT, warangal
4. Dr. M. Venu Gopala Rao - Member -
5. Dr. V. RATESH - Member -
6. Dr. T.V. Rama krishna - Member - TV Rama Krishna
7. Dr. M.S.G. Prasad - Member -
8. Dr. ASCS Sastry - Member -
9. Dr. K.S. Ramesh - Member -
10. Dr. P.S. Srinivas Babu - Member -
11. Prof. N. Venkat Ram - Member -
12. Dr. Fazal Noorbasha - Member -
13. Mr. B. Murali Krishna - Member -
14. Dr. K. SARAT KUMAR - Member -

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It is resolved to start M.Tech program in "~~Systems~~ Signal processing" from the A.Y. 2013-14.

It is resolved to adopt the modifications suggested by the members

It is resolved to approve the syllabus suggested for the students joined in year 2013 as per the DAC recommendation.

H.C

Chairman
Board of Studies in ECE
KL University

M. Tech VLSI [A.Y - 2013 - 2014]

S.NO	COURSE CODE	COURSE NAME	L-T-P	Cos	COURSE OUTCOME	P01	PO2	PO3	1	PO5	Added/Modified/ Retained	Course rationale
1	13 EC 553	IC Fabrication		1	Ability to understand the Concepts of fabrication and steps following for fabrication			3	2		Retained	Fabrication process will be analysed by students
				2	Understand different modelling technologies and materials used for fabrication		3		3			
				3	Ability to understand the concepts of lithography and deposition		2		4			
				4	Analyze the various etching technologies for preparation of ICs		2		5			
2	13EC552	HDL & PLD Architectures		1	Understand the basics concepts of digital system design, their modeling techniques in Verilog HDL.	3			1		Retained	Digital system design and modelling techniques are studied by students
				2	Design of various Combinational & Sequential Logic realizations using Verilog HDL.			3	2			
				3	Compare and analysis of different PLD's and CPLD's architectures.		2		3			
				4	Memorize and analysis of different FPGA architectures.			2	4			
				5	Create and Analysis of digital modules through project oriented approach				5	3		
3	13EC550	MOS CIRCUIT DESIGN		1	Understand the basics concepts of digital system design, their modeling techniques in Verilog HDL.		2		1		Retained	Complete operation of MOS device and MOS circuits can be analysed
				2	Design of various Combinational & Sequential Logic realizations using Verilog			2	2			

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					HDL and design flow							
				3	Characteristics of inverter and calculation of different delays			2	3			
				4	Design of different combinational and sequential circuits			2	4			
				5	Create and Analysis of digital modules through project oriented approach				1	3		
4	13EC551	ALGORITHMS FOR VLSI DESIGN		1	Ability to understand the Concepts of design methodologies in routing and layout	2		3	2		Retained	Students acquire knowledge on Algorithms used for efficient VLSI design methodologies
				2	Understand different levels of modelling of digital circuits and scheduling	2		2	3			
				3	Ability to understand the FPGA Technologies for development of physical design	3		2	4			
				4	Analyze the routing and distribution of cells in ICs			3	1			
5	13EC520	IMAGE & VIDEO PROCESSING		1	Ability to understand the different transforms for image processing		3		2		Retained	Students acquire clear study ondifferent Image Processing Techniques
				2	Understand different techniques for image processing	3	2		3			
				3	Ability to understand the concepts of Image Compression		2		4			
				4	Analyze the various steps in video processing	3	2		1			
6	13EC559	VLSI SIGNAL PROCESSING		1	Ability to understand the architectures of DSP Systems		2		2		Retained	Complete knowledge on Signal Processing is acquired by students
				2	Understand Data Flow Graphs and iteration bounds			2	3			

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				3	Ability to understand the Parallel Processing and Pipelining		3		4				
				4	Analyze the various algorithms and convolutions for filters		3						
2013-14 (Semester II)													
1	13EC570	Advanced Analog IC Design		1	Understand the operation of different current mirrors	2					Added	Students acquire knowledge on Analog Integrated Circuits
				2	Analyze the frequency response of different Amplifiers.	2						
				3	Design of two stage Op-Amp using single stage Op-Amp				2			
				4	Describe the various Feedback topologies.	2						
				5	Understand and apply the concepts of Non Linear Analog circuits.	2		2				
2	13EC555	Low Power VLSI Circuits		1	Understand power dissipations concepts related to VLSI circuits			2			Retained	Complete knowledge on low power VLSI circuits is acquired by students
				2	Evaluate the performance of different circuits using simulation & probabilistic power analysis.			3				
				3	Analyze low power techniques at logical, circuit, architectural and systems level			2				
				4	Analyze Clock Distribution techniques, Special techniques				2			
				5	Project based lab				2	3		
3	13EC556	VLSI System Design		1	Ability to understand the importance Programmable devices in VLSI			2			Retained	Complete overview of the VLSI design can be acquired by students
				2	Understand difference between Data path sub system and array subsystem				2			

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				3	Ability to understand the methodology of interconnects			2				
				4	Analyze synchronization of clock and synthesis of different disigns			2				
4	13EC571	Testing of VLSI Circuits		1	Understanding and application user-defined primitives in Fault dominance, understanding various simulation and Gate level event-driven simulation for digital circuits.		3				Added	Knowledge on Different testing techniques is acquired by students
				2	Understanding, Test generation for various Combinational logic circuits and ability to design its Testable Combinational circuits.		2					
				3	Design for Testability, Generic scan based design and Classical scan based design		2					
				4	Analyze and ability to Testable various BIST– MBIST, LBIST. Fault Diagnosis of digital circuits and Diagnosis by UUT reduction.		2					
5	13EC562	System On Chip Design		1	To understand the basic concepts of SOC design.		2				Added	Complete knowledge on SoC design implemented in industry is acquired by student
				2	To summarize and explain the performance evaluation methods	2						
				3	To classify and understand the power management process and modeling design tools			2				
				4	To understand and study the micro-architecture design and modeling, software and hardware design verifications	2		1				

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6	13EC568	ASIC Design Flow		1	Develop Program of different logic circuits using Verilog Programming and analyze different types of Faults in logic circuits.			2			Added	Student accquires knowledge on industry related ASIC Design flow
				2	Analyze different types of ASIC design methodologies and Different CPLD			2				
				3	Analyze ASIC design flow of customized ASICs				3			
				4	Analyze Physical design flow of ASIC, Extraction the final circuit				2			

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CO Vs SO Attainment 2013																				
Department		Electronics and Communication Engineering	L-T-P	Pre-req	SO	a	b	c	d	e	f	g	h	i	j	k	Added/ Retained/ Modified	Course Rationale
Sl No	Course Code	Course Title			CO#													
1	11ES 104	Engineering Graphics With CAD	0-0-4	NIL	Draft orthographic Projections, Isometric views, projection of planes, Manually and prepare Models in workshop by using drawings.	1										1	Modified	Students acquire the skills to draft and modeling of physical designs using CAD.
					Draft orthographic projections, isometric views, projection of planes using AutoCAD. Draft projection of solids Manually and by using AutoCAD and prepare Models in workshop by using different workshop trades	1										1		
					Draft Development of surfaces of solid and sections of solid Manually	1										1		
					Practicing house wiring through Auto Cad	1										2		
					Develop 2D & 3D components using Auto Cad Software	1										2		
2	13BS 102	Differential Equations	3-1-0	NIL	Formulate physical laws and relations mathematically in the form of first order differential equations	1											Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Higher order differential equations and identify a method for solving and interpreting the results.	1												
					Provide solutions for Fourier series of periodic/non-periodic phenomenon in models involving differential equations.	1												
					Model the given phenomena as a partial differential equations of first and second orders	1												
					Solve the partial differential equations by analytical and finite difference methods													
3	13ES 101	Problem Solving Through Programming	3-0-2	NIL	Understanding the basic scalar types, input/output functions operators, and expressions					2							Modified	Students understand the basic concepts and develop skill to implement by programming
					Understanding statements and control flow charts	1				1								
					Understanding the functions, arrays, pointers.	1				1								
					Understanding and applying structures, characters, strings, and storage classes.	1				2								
4	13ES	Measurements	3-0-2	NIL	Understand and apply the fundamentals of a measurement					1							Modified	Course

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	102				system, characteristics, and metrology using simulation and experimentation tools.													develops the understanding in measuring various physical quantities and develop skill through practical experiments.
					Understand various electrical & computer parameters, and apply different measuring techniques on various electrical parameters using simulation and experimentation tools.	1				1							
					Understand electronic & electro-physiological parameters, and apply measuring techniques on electronic parameters using simulation and experimentation tools.	1				1							
					Understand and apply different measuring techniques on civil and mechanical parameters using simulation and experimentation tools.	1				2							
5	13ES 103	Engineering Materials	3-0-0	NIL	Understand the concepts of crystallography and crystalline imperfections in order to determine crystal structures and to identify defects in crystals	1										Modified	Students understand the concepts of material physics and develop skill to propose various inter discipline projects
					Understand electrical and optical properties of materials and apply them to know various mechanisms involved in electrical, electronic, optical, optoelectronic devices.	1											
					Understand mechanical and thermal properties of materials and apprehend their importance in identification of materials for specific engineering applications	1											
					Understand magnetic properties of materials and apply them to know various mechanisms involved in magnetic memory devices and transformers.	1											
					Understand various properties of materials and apply the knowledge to execute the related experiments to get hands on experience and also to develop some inter disciplinary projects.	1											
6	13HS 102	Language and Reasoning Skills	2-0-2	NIL	Understand and analyze the depth of a topic and use the advanced levels in creative speaking and debating.							1				Added	Students understand the importance of language proficiency and reasoning skills in professional environment
					Understand and analyze various strategies involved in writing an essay and apply various styles in writing.							1					
					Understand and analyze the given text critically and answer questions on critical reasoning based on the given information.							1					
					Acquire knowledge on various employability skills & analyze a situation and develop adaptability.							1					
					Apply the Concepts of basic geometry and their importance while solving the problems.						1	2					
7	13HS 104	Human Values	2-0-0	NIL	Understand and identify the basic aspiration of human beings						1					Added	Course enhances the ethics suitable for professional
					Envisage the roadmap to fulfill the basic aspiration of human beings.						1						
					Analyze the profession and his role in this existence.						1						

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																			entrepreneurs hip
8	13BS 103	Engineering Physics	3-0-2	NIL	Understand the concepts of crystallography and crystalline imperfections in order to determine crystal structures and to identify defects in crystals	1											Modified	The course enhances the skill to understand and apply various physical properties of materials.
					Understand electrical and optical properties of materials and apply them to know various mechanisms involved in electrical, electronic, optical, optoelectronic devices.	1												
					Understand mechanical and thermal properties of materials and apprehend their importance in identification of materials for specific engineering applications	1												
					Understand magnetic properties of materials and apply them to know various mechanisms involved in magnetic memory devices and transformers.	1												
					Understand various properties of materials and apply the knowledge to execute the related experiments to get hands on experience and also to develop some inter disciplinary projects.	1	1											
9	11BS 105	Ecology and Environment	2-0-0	NIL	Understand the importance of Environmental education and conservation of natural resources.								1		1		Modified	Course enhances the environmental education suitable for professional jobs and entrepreneurs hip
					Understand the importance of ecosystems and biodiversity.								1		1			
					Apply the environmental science knowledge on solid waste management, disaster management and EIA process.								1		1			
10	13ES 106	Engineering Mechanics	3-0-2	Nil	Apply the concept of forces, governing static equations and analyze planer system of forces. Apply different analytical methods on spatial system of forces and analyzing them	2				1							Added	Students acquire the skill to apply various mechanical concepts to practical problems
					Understanding the concepts of planar and non-planar system of parallel forces and analyzing them. estimate moment of inertia of lamina and material bodies	1				1								
					Analyzing the rigid bodies under translation and rotation with and without considering forces.	1				1								
					Understanding the engineering mechanics physical systems prepare and demonstrate the models with the help of mechanics concepts to solve the engineering problems	2				2								
					Apply the concepts of mechanics and carryout different experiments and analyze the results		3											
11	13ES 105	Workshop Practice	0-0-4	NIL	Hands on experience on common tools in carpentry, fitting, tin smithy and soldering.											2	Retained	Enhances skill on various

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					Demonstration on work working, electrical and mechanical engineering practice.											2		peripherals
					Understanding the peripherals of CPU, assemble and dissemble of PC.											2		
12	11BS 104	Engineering Chemistry	3-0-2	NIL	Predict potential complications from combining various chemicals or metals in an engineering setting.	1											Modified	The course enhances the skill to understand and apply various chemical properties of materials.
					Discuss fundamental aspects of electrochemistry and materials science relevant to corrosion phenomena.	1												
					Examine water quality and select appropriate purification technique for intended problem.	1												
					Apply phase rule, polymers, conducting polymers and nano chemistry to engineering processes.	1												
					An ability to analyze & generate experimental skills.		2											
13	13BS 101	Linear Algebra and Multivariate Calculus	3-0-2	NIL	Understanding the linear algebra	1											Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Understanding the differential calculus	1												
					Determine the maximum and minimum values for the function involving two variables	1												
					Model the given phenomena as a partial differential equations of first and second orders	1												
					Solve the partial differential equations by analytical and finite difference methods	1										1		
14	13HS 101	English	2-0-2	NIL	Understand the method of identifying the meaning of words from the context and form sentences using words.						1						Modified	Students understand the importance of language proficiency in professional environment
					Understand and analyze seven types of reading techniques and improve reading speed.						1							
					Understand and apply writing strategies for office/ formal communication.						1							
					Understand and analyze different cultures and the importance of empathy in cross-cultural communication.						1							
15	13ES 205	Signal Processing	3-0-2	NIL	Understand the representation, manipulation and processing operations of DT signals and systems	1	1		1								Added	Students acquires the skill regarding the basics of signal processing
					Interpret the analysis of DT systems using Z.T.		2		2							2		
					Apply the Fourier Transformation techniques for DT sequences and their applications.		2			2								
					Ability to design, Implementation and realization of digital filters.											2		
16	13EC 201	Design of electronics systems	3-0-2	13BS103	**Design** Basic Electronics Systems and circuits	1				1							Modified	Students acquire the
					Design Basic amplifiers	2	2			2								

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					Design linear amplifiers using op-amps.	2	2			2												basic understanding of digital circuits suitable for core jobs.
					Design basic applications of diode, BJT and JFET.	2	2			2												
17	13ES 204	Data Structures	3-0-2	13ES101	Understanding the algorithm analysis and stacks and queues	1				1											Added	Students understand the concepts and apply the skill to practical applications
					understanding trees and hashing	1				1												
					Understanding priority queues and sorting.	1				1												
					Understanding the graph algorithms	1				1												
18	13ES 203	Network Theory	3-0-2	NIL	Understand the VI characteristics of electrical elements, solution of complex problems of DC circuits using transformations, nodal, mesh analysis and theorems.	1														1	Modified	Students understand the electrical characteristics of various circuits and develop the skill for practical applications
					Understand the fundamentals and interconnection relations of 3 – phase circuits.	1														1		
					Analyze the series and parallel resonance and magnetic circuits.	2														2		
					Analyze the transient analysis of DC / AC circuits, two port networks and solve complex networks using topology.	3														2		
19	13BS 201	MATHEMATICAL METHODS	3-0-0	NIL	Understanding numerical methods	1								1							Added	Course develop the skill in various numerical methods and transformations
					Understanding Fourier series and transforms	1								1								
					Understanding Z transforms	1								1								
					Understanding probability and distributions	1								1								
20	13ES 202	OBJECT ORIENTED PROGRAMMING	3-0-2	13ES101	The student will be able to understand basic Concepts of OOP, fundamentals of java and apply the concepts of classes and objects through Java Language.	2				2											Added	Students understand the concepts of OOP and develop to apply for practical implementation
					The student will be able to apply constructors, Overloading, parameter passing, and access control in Java programming.	2				2												
					The student will be able to apply Inheritance, Packages, Interfaces.	2				2												
21	13EC 203	Basics of Digital Systems	3-0-2	13BS101	Understand the representation of data using different codes and the principles of Boolean algebra to manipulate and minimize logic	1				1											Modified	Students acquire the

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					expressions													basic understanding of digital circuits suitable for core jobs.
					Analyze the functioning of different combinational logic circuits built with logic gates and the design procedure for developing circuits like adders, decoders, code converters, etc.				2									
					Analyze the behavior of flip-flops and the operation of sequential circuits using flip-flops				2									
					Apply the design approach for creating sequential circuits like counters, shift registers, etc., and the concept of ASM charts in describing the digital systems				2									
22	13EC 207	Analog Communications	3-0-2	13ES205	**Understand the basic principles of linear modulation and demodulation techniques**				1							Modified	Student can able to understand the various modes of higher communication systems.
					Explore analog and pulse modulation and demodulation techniques.				2									
					Elucidate the basic principles of angle modulation and demodulation techniques				2									
					Analyze the basic analog transmitters and receivers in the presence of noise				2									
23	13EC 205	Analog Electronic Circuits	3-0-2	13EC201	Design different types of feed-back amplifiers and provide general solution for real time problems				3							Added	Students acquire the basic understanding of digital circuits suitable for core jobs.
					Design different types of Oscillators and provide general solution for real time problems, and Design active filters using OPAMPs				3									
					Design other non-linear applications of OPAMPs such as precision rectifier, zero crossing detector, etc..., Design the applications of 555timer				3									
					Analyze different types of Power amplifiers				2									
24	13EC 202	Electromagnetic Fields Theory	3-0-2	13BS103	Apply the principles of vector calculus to estimate the static Electric field due to different sources.				1							Modified	Student can able to analyze EM propagation through various medium, which is require for the understanding of specialized courses.
					Obtain the boundary conditions on **E** field and understand the conecpts of magnetic field to calculate the static **H** field due to different sources.				2									
					Develop the boundary conditions on **H** field and extend the concepts of static fields to obtain the governing laws of electromagnetic field.				2									
					Perceive the propagation of uniform plane wave and its characteristics in different media, and interpret the characteristics of the guided waves to understand the modes of propagation in rectangular Wave-guide.				2									
25	13BS 202	Complex Variables & Discrete	3-0-0	NIL	Understanding complex variables	1								1		Added	Course develop the	
					Understanding special functions	1								1				

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		Mathematics			Understanding differential equations	1									1			skill in various functions and graph theory
					Understanding graph theory	1									1			
26	13ES 201	Thermodynamics	3-0-0	NIL	Understand the fundamentals of thermodynamic systems and processes	2				2							Added	Course develop the skill to apply law of thermodynamics in practical circuits.
					Apply laws of the thermodynamics and principle of entropy to engineering devices.	2				2								
					Analyze various air standard cycles and their performance.	2				2								
					Evaluate the performance of fuels and combustion to various engines.	2				2								
27	13EC 313	Antenna & Wave Propagation	3-0-2	13EC202	Understand basic radiating process and their parameters.	1				1							Modified	Student can able to understand the various modes of wireless communication systems.
					Understand and analyze the characteristics of different wire aperture and array antennas and the comparison between different state-of-the-art antenna technologies and processes.	2	2			2								
					Describe the wave propagation mechanisms at various levels of free space, deciding a suitable antenna for such a scenario.	2	2		2	2								
					Analyze antenna design and performance measures.		2									2		
28	13EC 308	Digital Communication	3-0-2	13EC207	Understand the fundamentals of digital communications and analyze the pulse digital communications, Matched filter performance, Inter Symbol Interference.	1				1							Modified	Student can able to understand the various modes of higher communication systems.
					Demonstrate about Nyquist channel, Signaling Schemes and Signal Space Analysis.	2	2			2								
					Analyze pass band data transmission and Comparison of different M-ary schemes.	2	2			2								
					Analyze different digital modulation schemes using single carrier.	2	2			2								
29	13CS 205	Computer Networks	3-0-2	NIL	Discuss different networks namely LAN, WAN, Internet and OSI, TCP/IP Models and basics of physical layer and data link layer issues					1						1	Modified	Student to understand the concepts and develop skill to apply for practical implementations
					Demonstrate Data Link layer design issues , medium access control sub layers and network layer design issues concepts					2						2		
					Analyze and implement the algorithms of Network Layer and related services					2						2		
					Examine the concepts of Transport Layer and the Application Layer functionality					2						2		
30	13EC 206	CMOS VLSI Design			Understand semiconductor device fabrication process	1											Modified	Students acquire the basic understandin
			3-0-2	NIL	Analyze the characteristics of CMOS circuits Construction and the comparison between different state-of-the-art CMOS technologies and processes					2						2		

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					Implement the a complete design verification process using computer- automated tools for scaling, layout, extraction, simulation, and timing analysis					2					2		g of digital circuits suitable for core jobs.
					Understand and analyze the design testing principle, time-delay concepts					2					2		
3 1	13EM 201	Computer Organization	3-0-2	13EC203	Understand the logical gates to construct combinational & sequential circuits to perform arithmetic µ-operations.	2	2			2					2	Modified	Course develop the skill to analyze and realize the operation of modern engineering tools
					Develop micro Programs for design of Control Unit, CPU	2	2			2					2		
					Analyze and realize operations like Multiplication, Floating Point algorithms using supporting modern engineering tools.	2	2			2					2		
					Understand the Peripherals, I/O interface and Direct Memory Access.	2	2			2					2		
3 2	13AC 202	Employability Skills	1-0-2	NIL	Understand the campus selection process with special focus on Effective Communication and Attitude.										1	Added	Course enhances the skill with focus on professional life and campus interviews
					Analyze himself/herself for the campus Interviews.						2						
					Understand the professional behaviors' for entry into the professional world.									1			
					Analyze logically and solve problems in professional life.								2				
3 3	13EC 312	Design with PLD and FPGA	3-0-2	13EC203	Understand the basics of Full custom, Semicustom and PLD design methodologies		1									Modified	Students acquire the basic understanding of digital circuits suitable for core jobs.
					Design various combinational & sequential logic realizations using PLEs & PLDs.		2										
					Analyze the architectures of different FPGAs.		2										
					Design various sequential logic realizations using new generation PLDs.		2										
3 4	13EC 314	Microwave Engineering	3-0-2	13EC202	Understand the essential features and principles of microwave devices and various mathematical models which are relevant to microwave systems and asses the limitations of devices					1						Modified	Students acquires the skill to work microwave systems and microwave communication systems.
					Understand various types of High gain and wide band Microwave tubes					1							
					Understand the microwave passive devices, Tee junctions and various ferrite devices.					1							
					Understand the operation of solid state devices (Various Diodes operate at high frequency), ferrite devices and analyze the measurement of parameters at high frequency level.					2					2		
3 5	11EC 311	Microprocessors & Microcontrollers	3-0-2	13EC203 OR	Understand the working of Microcontroller 8051 and apply the knowledge of Architecture and Instruction Set		2									Modified	Students acquires the

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				13CS201	Understand the working of Internal Peripherals of 8051 and Apply Interfacing concepts of few I/O Peripherals to 8051 through programming.		2												skill to work with microprocessors and microcontrollers
					Understand the functional model of Microprocessor 8086 (term)		2												
					Understand the working model of ARM Processor		2												
36	13EC340	Information Theory Coding	3-0-0	13EC207 OR 13EM202	Understand the technique of measuring information and average of information for the independent and dependent sources.					1						1	Added	Students acquires the skill regarding the security of information for wireless communications.
					Apply the procedure for Huffman, Shannon-fano Encoding methods and getting rate of information transmission.					2						2		
					Apply the procedure to calculate channel capacity and to detect/correct errors using linear block codes.					2						2		
					Apply the concept of the encoding for binary cyclic and the convolution codes.					2						2		
37	13EC364	Design for Testability	3-0-0	13EC206/ 13EC312	Understand the basic concept of reliability and modeling of faults as a requisite for achieving manufacturing quality of semiconductor devices and then testing techniques, fault detection in combinational circuits are described.		1										Added	Students acquires the skill regarding the testing of VLSI circuits and systems.
					Describe the testing & fault detection in sequential circuits, and then minimization and folding techniques to achieve area-efficient design of VLSI chips.					1								
					Illustrate the fault detection & recovery methods to achieve fault tolerant design of VLSI chips.					2								
					Examine The test pattern generation for BIST and specific BIST architectures.		2											
38	13EC371	Modern Digital Signal Processing	3-0-0	13ES205	Acquire the fundamental concepts of decimation and interpolation for multirate signal processing	1										1	Added	Students acquires the skill regarding applications of signal processing processors.
					Estimation of power spectrum using parametric and non-parametric method. Matlab implementation to demonstrate relative merits and demerits					2						2		
					Realization of DFT filter banks and trans multiplexers analysis. Demonstration and implementation for two channel perfect reconstruction in time and frequency domain.					2								
					Demonstration of DFT filter banks in Sampling rate converter, Phase shifter, Sub band coding and Sensor systems					2								
39	13CS334	TCP / IP Protocol Suite			Analyze the components of TCP suite					2						2	Retained	Students acquire the skill to apply concepts to various
			3-0-0	13CS205	Analyze the concepts of IP protocol ,mobile IP,P Addressing mechanisms & attacks on IP					2						2		
					Apply socket API to write programs related to client server communication					2						2		

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					Applying various application layer paradigms .					2					2			practical applications
40	13EC 345	EMI/EMC	3-0-0	13EC202	Understand the EMI, EMC Concept , EMI Control technique such as shielding	1	1			1					1	Added	Students acquires the skill to work microwave systems and microwave communicati on systems.
					Analyze EMI Control technique such as bonding, transient suppressors, Design Guidelines	2	2			2					2		
					Understand EMC Design guidelines	2			2	2					2		
					Understand Passive Components for EMC, testing setups	1	1			1					1		
41	13EC 362	Low Power VLSI Design	3-0-0	13EC206/ 13EC312	**understand the physics of power dissipation, dynamic and leakage power and what makes a circuit or device a low power device**	1	1			1					1	Added	Students acquires the skill regarding the testing of VLSI circuits and systems.
					Learn power estimation CMOS circuits for by using Simulation techniques and probabilistic analysis	1	1			1					1		
					Understand and apply low power techniques at circuit level and gate level	2			2	2					2		
					apply architectural techniques e.g. flow graph transformations , usage of low power data path components, low power clock structures to create low power devices	2	2			2					2		
42	13EC 373	Multi Rate Signal Processing	3-0-0	13ES205	Demonstrate various multirate operations and associated filter bank models.	2									2	Added	Students acquires the skill regarding applications of signal processing.
					Analyze maximally decimated filter bank structures and their poly phase representation.					2					2		
					Understand para-unitary systems and linear phase perfect reconstruction filter banks					1							
					Analyze cosine modulated filter banks and their poly phase structures					2							
43	13CS 335	Network Programming	3-0-0	13CS205	**Analyze** Socket API from Network Programming perspective					1					1	Added	Students acquire the skill to apply the concepts to practical applications
					Apply socket API for TCP and UDP to write programs related to Client/Server communication					1					1		
					Analyze various Advanced Sockets & Networking Applications through Unix domain protocols and Routing Sockets					2					2		
					Construct multiple threads that communicate with each other using Sun RPC					2					2		
44	13E M332	PCB Design	3-0-0	NIL	Understand the active and passive components, characteristics and the materials used along with their properties, mounting components on PCB , classification of PCB boards					1						Added	Students acquire the skill to apply the concepts to practical applications
					Understand different copper clad laminates and their properties, Soldering techniques.					1							

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					Apply the knowledge of schematic and layout design a PCB					1									
					Understand the basics of PCB Fabrication and generate foot print for library, etc					1									
45	11EE 304	Control Systems	3-0-2	13ES203	Students can be able to understand control system concepts such as open, closed loop systems, transfer function approach, mathematical modeling of physical systems and can understand analyze the similarities between Synchronous and ac generators					1								Retained	Students acquire the skill to apply the concepts to practical applications
					Students can be able to Analyze the time domain and frequency response of physical systems					2									
					Students can be able to understand and analyze stability of given transfer functions in time and Frequency domain and can be able to analyze the process of Converting state space equations into transfer function for the given model.					2							2		
					Students can be able to design and analyze controllers and lead, lag, lead-lag compensators					2							2		
46	13EC 415	DSP Processors and Architecture	3-0-2	13ES205	Acquire the fundamental concepts of Digital Signal Processing	1												Modified	Students acquires the skill regarding applications of signal processing processors.
					Learn the architecture details of Digital signal processors Architecture					2									
					Learn the TMS320C54XX architecture details of Digital signal processors Architecture					2									
					Analyze and learn to implement the signal processing algorithms in DSPs.					2									
47	13EC 342	Optical Communications	3-0-0	13EC207 OR 13EM202	Understand the basics of Light signals and different items of Optical communication link , advantages and applications .					1								Added	Student can able to understand the various modes of higher communication systems.
					Understand the concepts of transmission characteristics of optical fibers and Dispersion					1									
					Understand the concepts of sources, Detectors, Electro optic modulation and optical Amplifiers for optical communications					2									
					Understand the optical communications methodologies in communication networks					1									
48	13EC 461	Analog VLSI Design	3-0-0	13EC206/ 13EC312	Understand the functionality and Electrical Properties of MOS Devices		1											Added	Students acquires the skill regarding the analysis and design of VLSI circuits that required for core jobs.
					Analyze different passive & active current mirrors					2									
					Analyze different amplifiers and their frequency Responses					2									
					Understand the concept of differential amplifiers and operational amplifiers & feedback topologies					2									
49	13EC 364	RF System Design	3-0-0	13EC206/	Understand the Importance of RF and Microwave Circuit Design, Analyze RF behavior of passive components, their properties and					1								Added	Students acquires the

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				13EC312	its various applications, Compare Types of Transmission Lines and represent Equivalent Circuits													skill to analyze microwave communication systems.
					Analyze Smith Chart as Graphical AID/Tool for RF Design; Derive and Describe types of Smith Chart; Propose a Smith Chart for design of Active RF systems					2								
					Analyze Scattering parameters for Single And Multiport Networks; Model Signal Flow Chart					2								
					Analyze Unit Element and Kuroda's Identities Transformations; Stability Considerations and stabilization methods, RF Amplifiers Using Small Signal Analysis					2								
50	11EM334	Micro Controllers Interfacing & System Design	3-0-0	11EC311	Understand and remember the fundamentals of the microcontrollers like architecture, memory organization.					1							Retained	Students acquire the skill to apply the concepts to practical applications
					Apply the instructions in writing basic assembly language programming.					2								
					Apply the concepts of interrupts, timers in applications where required.					2								
					Analyze the differences in architectures of 8051 and PIC µc's and Analyze Different I/O devices and their interfacing to 8051 µc					2								
51	13EC372	Digital Image Processing	3-0-0	13ES205	Understand the fundamental concepts of a digital image processing system	1											Added	Students acquires the skill regarding applications of signal processing for imaging applications.
					Apply different image transformation techniques for digital image processing					2								
					Develop algorithms for digital image processing operations such as histogram equalization, enhancement, restoration, apply these techniques to real world problems.					2								
					Develop algorithms for digital image processing operations such as, image compression and color image processing and image segmentation and be able to apply these techniques to real world problems					2								
52	13EC443	Satellite Communications	3-0-0	13EC207 OR 13EM202	Understand the fundamentals of satellite communications and characteristics of communication satellites.1					1							Added	Students acquires the skill regarding the analysis and design of satellite systems that required for core jobs.
					Design general satellite orbital terms and elements.	2												
					Understand satellite subsystems which comprise space, earth segments and link budget parameters					1								
					Understand the basic concepts of multiple access techniques, satellite navigation and GPS					1								
53	13EC363	ASIC Design	3-0-0	13EC206/	Analyze different types of ASIC design methodologies and Different CPLD Architectures		2										Added	Students acquires the

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				13EC312	Develop Program of different logic circuits using HDL and Verilog Programming and analyze different types of Faults in logic circuits.					2								regarding the analysis and design of VLSI circuits that required for core jobs.
					Analyze ASIC design flow					2								
					Analyze Physical design flow of ASIC, Extraction the final circuit					2								
54	13EC474	Speech Processing	3-0-0	13ES205	Understanding the fundamentals of speech production and its modeling					1							Added	Students acquires the skill regarding applications of signal processing for speech applications.
					Analyzing various speech coding methods					2								
					Understanding of speech synthesis models and their applications					1								
					Demonstrate automatic speech recognition systems and analysis for their development					1								
55	13CS433	High Speed Optical Communication Networks	3-0-0	13CS205	Understand the basics of light signals and different types of optical communication link methodologies					1							Added	Students acquire the skill to apply the concepts to practical applications
					Understand the concepts of transmission characteristics of optical fibers and dispersion					1								
					Analyze the concepts of optical transmission and detectors, electro optic modulation and optical amplifier					2								
					Analyze the concept of basic networks					2								
56	13EC447	Radar and Navigational Aids	3-0-0	13EC313	Understand the essential principles of operation and design of simple radar systems and the associated signal processing, at block diagram level.					1							Added	Students acquires the skill regarding the analysis and design of radar systems that required for core jobs.
					Apply appropriate mathematical and computer models relevant to radar systems to calculate system performance, and assess the limitations of particular cases.		2											
					Apply the principles of Electronic Warfare, stealth and counter stealth, and bi-static radar, and apply the appropriate design equations to calculate performance.					2								
					Apply the principles of tracking radars and radio navigation systems (including secondary radar and GPS).					1								
57	13EC444	Cellular Communications	3-0-0	13EC308 OR 13EM202	Understand the basic principles of wireless communication systems					1							Added	Students acquires the skill regarding the analysis and design of cellular systems that
					Explore propagation mechanisms and channel interferences.					2								
					Elucidate the basic principles equalizers, receiver techniques.					2								
					Analyze wireless systems & OFDM standards.					2								

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																		required for core jobs.
58	13EC 465	Mixed Signal Circuits & Systems	3-0-0	13EC206/ 13EC312	Analyze the data converter fundamental principle by ADC and DAC		2										Added	Students acquires the skill regarding the analysis and design of VLSI systems that required for core jobs.
					Performance evaluation of different ADC and DAC circuits.					2								
					Analyze Data converter Architectures and SNR by using different types of ADC and DAC					2								
					Analyze the Wireless Communication Systems by using mixed-signal.					2								
59	13EC 470	Array Signal Processing			Understand concepts of signals in various domains and sensor arrays					1							Added	Students acquires the skill regarding applications of signal processing applications.
					Analyze signal arrays by using different methods in far field region					2								
					Analyze Beam foaming techniques by using various signals In spatial spectrum					2								
					Understand different algorithms used in Array signal processing					2								
60	13EC 349	Radiating Systems	3-0-0	13EC313	Understand the basic antenna parameters of different antennas to estimate the radiation characteristics of different current distributions		2										Added	Students acquires the skill to work microwave systems and microwave communication systems.
					Analyzing the different distributions of an antenna and Apply the concept of radiation to reflector antenna.		2											
					Analyze the characteristics of linear antennas, antenna synthesis techniques and micro strip antennas.		2											
					Understand the different types of strip antennas and analyzing the radiation parameters using antenna measurements.		2											
61	13CS 434	Wireless Communications and Networking	3-0-0	13CS205	Describe various CDMA, cellular mechanism wireless network models.	2											Added	Students acquire the skill to apply the concepts to practical applications
					Discuss OFDM and multiple radio access	2												
					Explain wireless system WANS, LANS, services	2												
					Explain ADHOC Sensor network					2								

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MINUTES

Name of the meeting: Internal Board of studies
of: ECE dept.
held on 18/11 2013, at 12.30 A.M./P.M. under the chairmanship of Sri Dr. Habibulla Khan
at: ECE HOD's Chamber

The internal Board of studies meeting of ECE dept was held on 18/11/13 at 12.30 PM @ HOD's Chamber. The following members were present.

1) Dr. Habibulla Khan

BOOK

1. General Body, Board or as the case may be.
2. The name of the Company.
3. The place at which the meeting was held.
4. At the end of the minutes. Chairman to sign mentioning the number of correction made, if any, in recording the minutes of the meeting.

It is resolved to offer a course by name "elements of software defined radio" as a professional core elective for the students of III year in 2nd semester.

H. Chairman.

Chairman
Board of Studies in ECE
KL University

MINUTES

Name of the meeting: Board of Studies
of: ECE Department
held on 19/3/2014, at 3. ~~A.M.~~/P.M. under the chairmanship of ~~Sri~~ Dr. ASCS Sastry
at: HOD's Chamber, ECE Department.

The Board of Studies meeting of ECE Department was held on ~~20~~ 19th March 2014 in the HOD's chamber to approve the syllabus for the courses to be included into the list for Pre-PhD Examinations from the Department.

The following members were present.

1. Dr. ASCS Sastry. - Chairman BOS – [signature]
2. Dr. Habibulla Khan - Member – [signature]
3. Dr. S. Lakshminarayana - Member – [signature]
4. Dr. M. Venugopala Rao " – [signature]
5. Dr. K.S. Ramesh " – [signature]
6. Dr. EV Krishna Rao " – [signature]
7. Dr. K. Sarat Kumar " – [signature]
8. Dr. V. Rajesh " – [signature]
9. Dr. TVS Prasad Guptha " – [signature]
10. Dr. KSN Murthy " – [signature]
11. Dr. K. Kumar Naik " – [signature]
12. Dr. G.V. Subba Rao " – [signature]
13. Dr. Fazal Noor Basha " – [signature]
14. Dr. D.V. Ratnam " – D.V Ratnam
15. Dr. Rehman " – [signature]

BOOK

1. General Body, Board or as the case may be.
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4. At the end of the minutes. Chairman to sign mentioning the number of correction made, if any, in recording the minutes of the meeting.

It is resolved that the syllabus of the two courses namely (a) Basis of MEMS (b) MEMS Measurement techniques attached herewith is approved to be included into the List of Courses for Pre-Ph.D

It is resolved that the syllabus of the Course of Global Positioning System attached herewith is approved to be included into the list of Courses for Pre-Ph.D.

MINUTES

Name of the meeting: Board of Studies
of: ECE Department
held on 18/6/2014, at 12:~~3A.M.~~/P.M. under the chairmanship of ~~Sri~~ Dr. ASCS SASTRY
at: HOD's Chamber, ECE Department.

The Bos meeting of ECE Department was held on 18th June 2014 in the HOD's Chamber to approve the syllabus for the Courses of M.Tech (RF & Microwave Engineering) and the Structure for the same to be commenced from the academic year 2014-15.

The following members were present.

1. Dr. ASCS Sastry. - Chairman, Bos
2. Dr. Habibulla Khan - Member
3. Dr. S. Lakshminarayana - " - S. Lakshminarayana.
4. Dr. V. Rajesh - " - 18/6/14
5. Dr. E. V. KrishnaRao - " - EVKR
6. Dr K. Kumar Naik - " -
7. Dr. K. Seetaiah Spl. Invitee.
8. Sri. D.S. Ramkiran - Member -
9. Sri. M. VenkataNarayana - " -
10. Prof. N. Venkatram Spl. Invitee
11.

BOOK

1. General Body, Board or as the case may be.
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4. At the end of the minutes. Chairman to sign mentioning the number of correction made, if any, in recording the minutes of the meeting.

The curriculum and the Course structure for M.Tech RF & Microwave Engineering is approved.

DAC recommendations are considered and modifications maybe carried out in next regulations.

Dr. A Secs Sastry.
(Chairman, BOS)

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MINUTES

Name of the meeting: Board of studies.
of: ECE Dept
held on 1/12 2014. at 11:00 A.M./P.M. under the chairmanship of Sri Dr. A.S.C.S Sastry
at: Room no: 307, ECE Dept

The BOS meeting of ECE Dept was held on 1st Dec, 2014 in Room no: 307, to approve the syllabus and other discussions regarding the syllabus for the academic year 2014-15. Curriculum design according to new methodologies is also one of the agenda.

The following members were present

1. Dr. A.S.C. Sastry – Chair man- BOS —
2. Dr. K.S. Ramesh –
3. Dr. T.V Rama Krishna —
4. Dr. M. Siva Ganga prasad –
5. Dr. Md Zia ur Rahman
6. Dr. P.V.V. Kishore –
7. Dr. G.V. Subbarao
8. Dr. M. Venu Gopala Rao
9. D.S. Ram Kiran —
10. M.V. Narayanan –
11. Dr. K. Sanat Kumar
12. Dr. V. RAJESH
13. Dr. J. Lakshmi Narayana
14. Dr. Habibulla Khan

1. General Body, Board or as the case may be.
2. The name of the Company.
3. The place at which the meeting was held.
4. At the end of the minutes. Chairman to sign mentioning the number of correction made, if any, in recording the minutes of the meeting.

15. S. Lakshminarayana

14. Mr. Fazal Noorbasha

15. Dr. Ranjan K. Senapati

Dr. A.S.C.S Sastry
(chairman, BOS).

BOS Meeting.

Dr. ASCS Sastry

Sun 11/30/2014 9:43 PM

To:Dean Student Affairs <habibulla@kluniversity.in>; Lakshminarayana <drslakshminarayana@kluniversity.in>; Sarat K Kotamraju <kksarat@kluniversity.in>; K.S.Ramesh <dr.ramesh@kluniversity.in>; M.S.G.Prasad <msivagangaprasad@kluniversity.in>; Dr. TV Rama Krishna <tottempudi@kluniversity.in>; ksnmurty <ksnmurty@kluniversity.in>; MVGR <mvgr03@kluniversity.in>; Dr. Vullanki Rajesh <rajesh71@kluniversity.in>; Dr. E V Krishna Rao <evkr@kluniversity.in>; Dr.P.V.V.Kishore <pvvkishore@kluniversity.in>; Dr. M.Z.Rahman <mdzr@kluniversity.in>; Ranjan <ranjan.senapati@kluniversity.in>; J L Narayana <drjlnarayna@kluniversity.in>;

Dear all,

Good evening. Board of Studies meeting of the department is scheduled on 1st December 2014 at 11.30 hrs in the department library.

Agenda:

Discuss the preliminary issues of design of the new curriculum (structure) for the 2015 batch based on the scientific methods and as per the ABET requirements.

All the members are requested to attend.

Thanks and Regards,
Dr.A.S.Chandrasekhara Sastry,
Professor & Head,
Department of ECE,
(DST - FIST Sponsored Department)
K L University.
Mobile no. : +91 9848099508

MINUTES

Name of the meeting: Board of Studies
of: ECE Department
held on 6/7/2015, at 12:30 A.M./P.M. under the chairmanship of Sri Dr. A.S.C.S Sastry
at: Room No: , C Block

The BOS meeting of ECE Department was held on 6th July, 2015 in Room No. , to approve the following agenda:

1. Modifications in the Structures of 2012-16 batch of B.Tech
2. Modifications in the Structure of 2013-17 batch of B.Tech
3. Curriculum and Structure of 2015-19 batch of B.Tech
4. Curriculum modifications in the M.Tech (CR) and M.Tech (RF & MW Engg.)

The following members were present:

1. Dr. A.S.C.S Sastry - Chairman - BOS -
2. Dr. Fazal Noorbasha.S.
3. Dr. K. Srinivasa Rao.
4. Dr. D.S.G. Prasad
5. Dr. M. Venu Gopala Rao
6. Dr. K.S. Ramesh
7. (Dr. G.V. Subbarao)
8. S. Koteswara Rao
9. Dr. P.V.V. Kishore.
10. Dr. K. Kumar Naik. -
11. Dr. D. VENKATA RATNAM -
12. B.T.P Madhav -
13. K. Sarat Kumar -

BOOK

1. General Body, Board or as the case may be.
2. The name of the Company.
3. The place at which the meeting was held.
4. At the end of the minutes. Chairman to sign mentioning the number of correction made, if any, in recording the minutes of the meeting.

(14) Dr K.S.N. Murthy

(15) Dr. K. Ch. Sridevi

Dr. A.S.C.S. SASTRY
Professor & Head
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Green Fields, VADDESWARAM
Guntur District, A.P., India.

CHAIRMAN, BOS
DEPARTMENT OF ECE

⇒ It was approved by all the members to include a new course on Global Navigational satellite systems in to M.Tech C&R & M.Tech RF-microwave. Copies the curriculum & Associated lab enclosed.

1) It is resolved to modify the course structure of 2012-16 to accomodate two open electives in the Final year second semester along with Project (or Practice school)

2) the modified course structure is enclosed.

2) It is resolved to modify the course structure of 2013-17 to accomodate two open electives in the Final year second semester along with Project (or Practice school)

3) The Proposed (Tentative) structure for 2015-19 batch is Presented and discussed at length and approved by all the members except for some suggestions of change of Names of the courses.

4) As per the letters from the Head, Department of Atmospheric Science & the name of the PG specialization (An interdisciplinary specialization Run under the ECE Dept) of Atmospheric Science & Space Technology was renamed as Space Technology & Atmospheric Science

5) Modifications in the course structures of M.Tech C&R & M.Tech RF-Microwave were approved by the members. Modified structure enclosed

BOS Meeting

Dr. ASCS Sastry

Sun 7/5/2015 8:07 PM

To:Dean Student Affairs <habibulla@kluniversity.in>; Dr. TV Rama Krishna <tottempudi@kluniversity.in>; M.S.G.Prasad <msivagangaprasad@kluniversity.in>; Sarat KK <kksarat@kluniversity.in>; K.S.Ramesh <dr.ramesh@kluniversity.in>; ksnmurty <ksnmurty@kluniversity.in>; Lakshminarayana <drslakshminarayana@kluniversity.in>; Dr. M.Z.Rahman <mdzr@kluniversity.in>; Ranjan <ranjan.senapati@kluniversity.in>; Dr.P.V.V.Kishore <pvvkishore@kluniversity.in>; Dr. G.V.S.RAO <gvs0raos@kluniversity.in>; ratnam <dvratnam@kluniversity.in>; K.Srinivasa Rao <ksrao_me@kluniversity.in>; S Koteswara Rao <skrao@kluniversity.in>; K Kumar Naik <kumarnaik@kluniversity.in>; Dr. Fazal Noorbasha <fazalnoorbasha@kluniversity.in>; Madhav <btpmadhav@kluniversity.in>; MVGR <mvgr03@kluniversity.in>;

Cc:Sri Kavya <kavya@kluniversity.in>;

Dear all,

There shall be a meeting of the **Board of Studies** of the Department of ECE on Monday, 6th July 2015 at 12.30 p.m in the Department Library.

Agenda:

1. Modifications in the structure of 2012-16 batch of B.Tech.
2. Modifications in the structure of 2013-17 batch of B.Tech.
3. Curriculum and structure of 2015-19 batch of B.Tech.
4. Curriculum modifications in the M.Tech.(CR) and M.Tech.(RF & MW Engg.)

All the members are requested to make it convenient to attend the same.

Thanks and Regards,

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MTech COMMUNICATION & RADAR [A.Y - 2015 - 2016]																	
S. NO	COURSE CODE	COURSENAME	L-T-P	CO No	CO	PO's									Added/ Modified/ Retained	Course Rationale
						1	2	3	4	5	6	7	8	9		
1	15EC5101	Modern Digital Communication Techniques	3-1-2	1	Understand different modern digital modulation techniques and probability of error statistics.	1									Modified	Student acquire knowledge on Digital Communication techniques and apply the skills to practical problems
				2	Analyze the performance of baseband and pass band data transmission in terms of signaling schemes.	2										
				3	Understand the concepts of block and convolution codes with respect to transfer functions and decoding operations.	1										
				4	Analyze the spread spectrum signals and signal analysis for different digital communication technologies.				2							
				5	Interpret different digital communication modules with respect to signal analysis in application orientation.				2							
2	15EC5102	Microwave Antennas	3-1-2	1	Understand the basic antenna parameters and radiation mechanism for different types.	1									Added	Complete analysis regarding Microwave antennas and apply the skill to practical world problems
				2	Identify the significance of aperture of antenna models and their feeding mechanism.		1									
				3	Design microstrip radiators with different shapes, slots and feeding techniques for communication applications.				3							
				4	Analyze the concepts of	3										

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					beam formation with respect to gain, directivity, impedance and polarization.											
				5	Estimate the performance characteristics of microwave antennas with the help of electromagnetic tools.				2							
3	15EC5103	EMI/EMC Techniques	3-1-0	1	Describe the concept of electromagnetic interference, compatibility and sources of EMI.	1								Added	Skills regarding EMI/EMC and be improved by students	
				2	Understand the electromagnetic interference in circuits and measurement techniques with open area test sites.			1								
				3	Interpret the conducted and radiated interference and measurements.			2								
				4	Utilize the techniques like grounding, shielding, bonding and EMI filters in the usage of cables , connectors and components.				1							
4	15EC5104	Radar Engineering	3-1-0	1	Understand the concept of radar communication and its ground environment.	1								Added	Student acquires knowledge on Radar Engineering and able to apply the skills to practical problems	
				2	Analyze the transmitter characteristics like output power, spectrum analysis and harmonics from transmitter.	3										
				3	Identify the factors outside the radar and analyze the propagation mechanism with scattering and clutter.			1								
				4	Classify different steps in receiver design and its parameters for determination of position.				2							

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5	15EC51A2	**Microwave Semiconductor Devices**	3-0-0	1	Understand the behavior of high frequency equivalent circuits and operation of varactor, schottky diodes with applications.				1						Added	Study of microwave semiconductors can be analysed by the student
				2	Outline the functionality of tunnel and IMPATT diodes with performance characteristics.	1										
				3	Estimate the applications of Gunn and PIN diodes in microwave integrated circuits.				2							
				4	Categorize different microwave transistors and their applications.			1								
6	15EC51B2	**GPS & Global Navigation Satellite System**	3-0-0	1	Understand GPS and UTC Time, Signal Structure and Get an idea about Receiver Components and Specifications.	1									Added	Complete analysis regarding Navigation Satellite can be achieved by student
				2	Perform Mathematical Analysis to estimate Clock Errors, Total Electron Content and Dual Frequency.		3									
				3	Discussion on GPS Data Processing and Position Fixing.		1									
				4	Understand GNSS Principle of Operation and Architecture.	1										
				5	Understand Different Satellite Navigation Systems like Galileo, GLONASS, IRNSS Space, Control and Ground Segments.	1										
7	15EC5205	**Microwave and Millimetric wave circuits**	3-1-2	1	Classify different microwave circuits based on applications.		1								Added	Students able to understand the concepts of waveguiding and
				2	Estimate the importance of			3								

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					transformers and resonators in microwave circuit design.										able to apply for practical applications
				3	Design of microwave filters and periodic structures.				3						
				4	Understand the feeding principles and excitation techniques in waveguide design.				1						
				5	Construct millimeter wave circuits using electromagnetic tools.				3						
8	15EC5206	Antenna Measurements	3-1-2	1	Understand the concepts of antenna pattern measurements and modeling techniques.		1							Added	Student achieve knowledge regarding Antenna measurements
				2	Estimate antenna testing in different environments like elevated, ground, near and radar cross section.			2							
				3	Examine the far field testing of antenna for gain, directivity and patterns.		1								
				4	Analysis of compact ranges and near field testing with cylindrical and spherical scanning.				2						
				5	Determine antenna parameters using measurement instruments like VNA and SR in real time environment.					1					
9	15EC5207	Wireless Cellular Communications	3-1-0	1	Understand the basic elements of cellular mobile radio system design.	1								Added	Student can achieve knowledge regarding Wireless Cellular Communications
				2	Identify different applications of speech coding in wireless systems.		1								
				3	Understand the radio propagation and cellular	1									

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					engineering concepts											
				4	Identify digital modulation and demodulation principles and architectures, interference in wireless communication systems.	1										
10	15EC5208	Modern RADAR Systems	3-1-0	1	Summarize the advanced techniques in modern radar system.	3									Added	Complete analysis of RADAR systems can be studied by the students
				2	Categorize advanced pulse compression waveform modulations and techniques.		1									
				3	Understand the concept of MIMO radar system and applications.				1							
				4	Realize the radar applications related to sparse reconstruction and compressed sensing and digital beam forming.				2							
11	15EC52C1	Estimation and Detection Theory	3-0-0	1	Classify different criteria associated to detection theory at receiver.		1								Added	Student achieve knowledge and can understand Receiver module
				2	Understand the concepts of integration of optimum receiver and matched filter receiver.			1								
				3	Analyze the maximum likelihood estimation methods.		3									
				4	Understand the concepts of estimation in the presence of Gaussian noise and prediction with Kalman filters.			1								
12	15EC52D1	RF and Microwave System Design	3-0-0	1	Understand the importance of RF & Microwave System design with passive components.	1									Added	Student can have complete knowledge and design the Micro

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				2	Understand Smith chart concept for analyzing S, Y, Z parameters.		1									wave Systems
				3	Analyze S-parameters with conversions and modeling.		2									
				4	Design of RF- filters, amplifiers and oscillators.				3							

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S. No	Course code	Course Name	L-T-P	Pre-req	Description of the Course Outcome	Mapping with SO											Added/ Modified/ Retained	Course Rationale
						a	b	c	d	e	f	g	h	i	j	k		
HUMANITIES & SOCIAL SCIENCES																		
1	15 EN 1101	Rudiments of Communication Skills	0-0-4	NIL	Remember speech sounds and apply stress and intonation rules to enhance pronunciation skills.							1					Added	Course develop the skill required for employability and entrepreneurship
					Understand writing strategies and apply those by using the basic and advanced concepts of grammar.							1						
					Understand the types of texts and tone of the author.							1						
					Understand the importance of interpersonal skills							1						
2	15 EN 1202	Interpersonal Communication Skills	0-0-4	NIL	Understand the method of identifying the meaning of words from the context and form sentences using words.							1					Added	Course develop the skill required for employability and entrepreneurship
					Understand and analyze seven types of reading techniques and improve reading speed.							2						
					Understand and apply writing strategies for office/ formal communication.							2						
					Understand and analyze different cultures and the importance of empathy in cross-cultural communication.				1			1						

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3	15 EN 2103	Professional Communication Skills	0-0-4	NIL	Understand the concept of Group Discussion and listen and speak effectively during the discussion.						1					Added	Course develop the skill required for employability and entrepreneurship
					Understand and improve learners' competency in competitive English and apply the principles of grammar in real life contexts.						2						
					Understand skimming & scanning, and apply the types of reasoning in comprehending the information.						3						
					Understand the mechanics and application of presentation skills.					1							
4	15 EN 2204	Employability Skills	0-0-4	NIL	Analyze one's own strength as a speaker/ Communicator and use discretion while listening.						2					Added	Course develop the skill required for employability and entrepreneurship
					Apply and analyze various concepts of writing strategies in professional communication skills like, reports, resume and minutes of the meeting.						3						
					Understand the organization of the passage and also analyze the tone, attitude and style of the author.						2						
					Acquire knowledge of and apply people skills in various social organizational and corporate ambiences					2							

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5	15 EN 3105	Verbal and Quantitative Reasoning	0-0-4	NIL	Understand the method of identifying synonyms and antonyms and analyze the meaning of a word from the context.									1			Added	Course develop the skill in verbal and quantitative reasoning
					Analyze issues and arguments in the process of critical reasoning and apply grammar rules to correct sentences.									1				
					Apply the Concepts of basic Algebra and their importance while solving the problems									1				
					Apply the short-cut methods on the concepts of different models in Calendars, Clocks, Blood relations and various types of arrangements									1				
6	15 EN 3206	Corporate Communication Skills	0-0-4	NIL	Understand and analyze the depth of a topic and use the advanced levels in creative speaking and debating.								1				Added	Course develop the skill required for employability and entrepreneurship
					Understand and analyze various strategies involved in writing an essay and apply various styles in writing.								2					
					Understand and analyze the given text critically and answer questions on critical reasoning based on the given information.								3					
					Acquire knowledge on various employability skills & analyze a situation and develop adaptability.							3	3					
					Apply the Concepts of basic geometry and their								2					

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					importance while solving the problems													
7	15 GN 1001	Ecology and Environment	2-0-0	NIL	Understand the importance of Environmental education and conservation of natural resources.								1			Modified	Course enhances the environmental education suitable for professional jobs and entrepreneurship
					Understand the importance of ecosystems and biodiversity.									1				
					Apply the environmental science knowledge on solid waste management, disaster management and EIA process.								2					
8	15 GN 1002	Human Values	2-0-0	NIL	Understand and identify the basic aspiration of human beings							1				Modified	Course enhances the ethics suitable for professional jobs and entrepreneurship
					Envisage the roadmap to fulfill the basic aspiration of human beings.							2						
					Analyze the profession and his role in this existence.							2						
9	15 MT 1001	Single Variable Calculus and Matrix Algebra	2-2-2	NIL	Formulate physical laws and relations mathematically in the form of first order differential equations and identify a method for solving and interpreting the results.				1							Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Formulate physical laws and relations mathematically in the form of second/higher order differential equations and identify a method for solving and interpreting the results.				1									
					Provide solutions for Fourier series of periodic/ non-periodic phenomenon in models involving differential equations.				1									

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					Apply numeric solution methods for a system of linear algebraic equations and application oriented matrix eigenvalue problems.				1										
					Verify the solution of problems through MATLAB.												1		
10	15 MT 1203	Multivariate Calculus	2-2-2	NIL	Determine the maximum and minimum values for the function involving two variables				2									Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Calculate the length of the arc, area, volume of the surface of a solid revolution				2										
					Model the given phenomena as a partial differential equations of first and second orders												2		
					Solve the partial differential equations by analytical and finite difference methods				2										
					Verify the solution of problems through MATLAB.												2		
11	15 MT 2005	Probability and Stochastic Models	2-2-2	NIL	Construct the probability distribution of a random variable, based on a real-world situation, and use it to compute expectation and variance												2	Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Predict the relationship between two variables and construct the linear and non-linear regression lines for the given data				2										
					Model the Single and multi servermarkovian queuing models with finite and infinite capacity.				2										

Professor & Head
Department of ECE

					Verify and validate the simulation models.											2		
					Verify the solution of problems through MATLAB/MINITAB.											2		
12	15 ME 1001	Mechanics	2-2-2	NIL	Apply the concept of forces, governing static equations and analyze planer system of forces. Apply different analytical methods on spatial system of forces and analyzing them	2											Added	Students acquire the skill to apply various mechanical concepts to practical problems
					Understanding the concepts of planar and non-planar system of parallel forces and analyzing them. estimate moment of inertia of lamina and material bodies	2												
					Analyzing the rigid bodies under translation and rotation with and without considering forces.					1								
					Understanding the engineering mechanics physical systems prepare and demonstrate the models with the help of mechanics concepts to 0solve the engineering problems					1								
					Apply the concepts of mechanics and carryout different experiments and analyze the results		2											
13	15 PH 1001	Engineering Materials	2-2-2	NIL	Understand the concepts of crystallography and crystalline imperfections in order to determine crystal structures and to identify defects in crystals			1									Added	The course enhances the skill to understand and apply various physical properties of materials.
					Understand electrical and optical properties of materials and apply them to know various mechanisms involved in electrical, electronic,			1										

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					optical optoelectronic devices.													
					Understand mechanical and thermal properties of materials and apprehend their importance in identification of materials for specific engineering applications			1										
					Understand magnetic properties of materials and apply them to know various mechanisms involved in magnetic memory devices and transformers.			1										
					Understand various properties of materials and apply the knowledge to execute the related experiments to get hands on experience and also to develop some inter disciplinary projects.			1										
14	15 CY 1001	Engineering Chemistry	2-2-2	NIL	Predict potential complications from combining various chemicals or metals in an engineering setting.			1									Modified	The course enhances the skill to understand and apply various chemical properties of materials.
					Discuss fundamental aspects of electrochemistry and materials science relevant to corrosion phenomena.			1										
					Examine water quality and select appropriate purification technique for intended problem.			1										
					Apply phase rule, polymers, conducting polymers and nano chemistry to engineering		1											

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					processes.													
					An ability to analyze & generate experimental skills.		1											
15	15 BT 1001	Biology for Engineers	2-0-0	NIL	Acquire the Knowledge of basic biology							1	2		Added	The course enhances the skill to understand and apply various biological properties in developing sensors systems
					Acquire the Knowledge of Human Biological Systems							1	2			
					Acquire Knowledge on Microorganisms							1	2			
					Acquire Knowledge on Biosensors											
16	15 EE 1201	Fields & Networks	2-2-2	NIL	Understand the circuit elements, kirchhoff's law and theorems to solve the networks	1								1	Added	Students understand the network properties and field theory in various circuits and develop the skill for practical applications
					Apply the procedure to determine form factor and peak factor to different symmetrical & unsymmetrical waves.	2										
					Apply vector algebra to field fundamentals to analyze electric and magnetic field distributions	2										
					Apply Maxwell's equations for static and time varying fields	2										
					Test and Analyze the concepts learned in fields and networks by conducting experiments or by any simulation software's	2										
ENGINEERING SCIENCES																		
17	15 GN 1004	Introduction to Engineering	2-0-2	NIL	Understand the basic principles of engineering design							2			Added	To understand basic principles of

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					Understand the aspects of critical thinking and problem solving in engineering							2						engineering design and apply the skills to practical applications
					Apply to knowledge of critical thinking to frame real-world problems and provide basic solution approach to such problems from engineering perspective					3								
					Understand and analyze the possible career options in Engineering and develop strategic plan, career targets and mechanism to achieve the same.													
18	15 CS 1101	C Programming & Data Structures	2-4-2	NIL	Illustrate how problems are solved using computers and programming.	2				2							Modified	Students understand the concepts and apply the skill to practical applications
					Illustrate and use Control Flow Statements in C.	2				2								
					Interpret & Illustrate user defined C functions and different operations on list of data.	2				2								
					Implement Linear Data Structures and compare them.	2	2			2								
					Apply the knowledge obtained by the course to solve real world problems.	2	2			2								
19	15 ME 1002	Engineering Graphics	0-0-6	NIL	Draft orthographic Projections, Isometric views, projection of planes, Manually and prepare Models in workshop by using drawings.											2	Retained	Students acquire the skills to draft and modeling of physical designs . using CAD.
					Draft ortho graphic projections											2		

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					,isometricviews, projection of planes using Auto cad. Draft projection of solids Manually and by using AutoCAD and prepare Models in workshop by using different workshop trades													
					Draft Development of surfaces of solid and sections of solid Manually											2		
					Practicing house wiring through Auto Cad											2		
					Develop 2D & 3D components using Auto Cad Software		2											
20	15 GN 1003	Measurements	0-0-4	NIL	Understand and apply the fundamentals of a measurement system, characteristics, and metrology using simulation and experimentation tools.	2	2										Modified	Course develops the understanding in measuring various physical quantities and develop skill through practical experiments.
					Understand various electrical & computer parameters, and apply different measuring techniques on various electrical parameters using simulation and experimentation tools.	2	2											
					Understand electronic & electro-physiological parameters, and apply measuring techniques on electronic parameters using simulation and experimentation tools.	2	2											
					Understand and apply different measuring techniques on civil and mechanical parameters using simulation and experimentation tools.	2	2											
					Apply the theoretical concepts to measure different parameters		2											

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21	15 CS 2002	Object Oriented Programming	2-2-2	NIL	Understand Basic Concepts of OOP, introduction to classes and objects through Java Language and apply.					2						Retained	Students understand the concepts of OOP and develop to apply for practical implementation
					Understand the concepts of constructors, Overloading, parameter passing, access control, Inheritance and apply.					2							
					Understand Packages, Interfaces, and Exception Handling and apply.					2							
					Understand I/O Streams & apply and understand Basic Concepts of Multi -Threading										3		
					Apply OOP concepts for developing an application										3		
22	15 EC 2002	Signal Analysis	2-2-2	NIL	Demonstrate signals and their Spectra 2	2										Added	Students acquires the skill regarding the basics of signal processing
					Analyze discrete time systems	2											
					Design filters to cater signal analysis needs										2		
					Analyze non stationary signals in time										2		
					Analyze non stationary signals in frequency domains										2		
23	15 CS 2003	Discrete Mathematics	2-2-2	NIL	Understand sets, relations, functions and discrete structures , Count discrete event occurrences	2										Added	Students develop the skill to apply various basic mathematics for practical electronics and communication
					Apply Propositional logic and First order logic to solve problems	2											

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					Formulate and solve recurrence relations, apply algebraic structures and lattices.										2		applications.
					To identify the basic properties of graphs and trees and model simple applications										2		
					Relate practical examples to the appropriate set, function or relation model and interpret the associated operations and terminology in context										2		
24	15EC 1101	Digital System Design	2-2-2	NIL	Understand numerical and character representation in digital logic, number system, data codes and the corresponding design of arithmetic circuitry.				2							Employability	Students acquire the basic understanding of digital circuits suitable for core jobs.
					Understanding Logic gates, Logic theorems, Boolean algebra and SOP/POS expressions.				2								
					Combinational and sequential systems design using standard gates and filp-flops and minimization methods				2						2		
					Verilog HDL design for logic gates, combinational and sequential Logic Functions.				2						2		
					Concepts of Programmable Logic devices.				2						2		
25	15 EM 2001	Computer Organization and Architecture	2-2-2	15EC1101	Understand the functionality and design the CPU functional units - control unit, registers, the arithmetic and logic unit, the instruction execution unit, and the interconnections among these components.			2							2	Added	Course develop the skill to analyze and realize the operation of modern engineering tools

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					Understand, analyze and design main, cache and virtual memory organizations.			2								2			
					Understand, analyze and design different types of I/O transfer techniques.			2								2			
					Understand the design issues of RISC and CISC CPUs and the design issues of pipeline architectures.			2								2			
					Able to Design combinational and sequential circuits using LOGISIM			2								2			
2	15 EC 2103	Analog Electronic Circuit Design	2-4-2	NIL	Able to Design combinational and sequential circuits using LOGISIM			3									Added	Acquire the skill to apply various practical problem of circuit design
					Understanding the concepts of various diodes and their applications.			3										
					BJT concepts as operation, biasing and frequency response			3								3		
					FET concepts as operation, biasing and frequency response			3								3		
					Feedback concepts and their analysis			3								3		
					Concepts of various oscillators and applications.			3								3		
27	15 EM 2202	Processors and Controllers	2-2-2	15EC1101	Able to understand and analyze the architectural features of CISC type of General purpose processor Intel 8086 Microprocessor.					2						3	Added	Students acquires the skill to work with microprocessors

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					Able to understand and analyze the architectural features of CISC type of microcontroller - Intel 8051Microcontroller.				2						3			and microcontrollers
					Able to understand and analyze the architectural features of RISC type of microcontroller – PIC Microcontroller.				2						3			
					Able to program 8086 microprocessor, 8051 and PIC microcontrollers in assembly language using TASM, KEIL, MPLAB and Proteus tools.				2						3			
					Able to Develop a real time application using 8051& PIC Microcontrollers through project based labs.				2						3			
28	15 EC 2204	Design with CPLD & FPGA	2-2-2	15EC1101	Study and design of combinational and sequential circuits using PLDs and state machines.			2								Added	Students acquire the basic understanding of digital circuits suitable for core jobs.	
					Understand Full-custom & Semi Custom design methodologies of for designing different PLD architectures.			2							2			
					To study PLD structures and design process			2										
					Study of different CPLD and FPGA architectures			2										
					To understand different physical process.			2							2			
29	15 EC 2205	Communication Theory-1	2-2-2	15EC2103	have a good understanding of both time and frequency domain representations of signals;		2								2	Added	Student can able to understand the various modes of higher	
					have a good understanding of analog modulation		2								2			

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					and demodulation techniques;												communication systems.
					have a good understanding of digital modulation and demodulation techniques; and		2								2			
					Understanding pulse modulation systems		2								2			
					Understand and be able to implement noise and error analysis of an analogue system.		2								2			
					Understand and be able to implement noise and error analysis of an analogue or digital telecommunication system.		2								2			
30	15 EC 2206	Signal Processing	2-2-2	15EC2002	Understand various signals and model physical process using them.				2							Added	Students acquires the skill regarding the basics of signal processing applications
					Acquaint with various a transformation methods and their potential for applicability in various signal analysis conditions				2								
					Demonstrate sampling and its potential applications in communications, discrete signal acquisition etc				2								
					Evaluate discrete system behavior and its response to facilitate system design.				2								
					Design a low pass discrete time system to meet noise elimination like applications				2						3		
					Analyze non stationary signals and analyze them in both time frequency domains.				2						3		

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31	15 EE 2207	Control Systems	2-2-2	NIL	Students can be able to understand control system concepts such as open, closed loop systems, transfer function approach, mathematical modeling of physical systems and can understand analyze the similarities between synchros and ac generators					1							Modified	Students acquire the skill to apply the concepts to practical applications
					Students can be able to Analyze the time domain and frequency response of physical systems					2									
					Students can be able to understand and analyze stability of given transfer functions in time and Frequency domain and can be able to analyze the process of Converting state space equations into transfer function for the given model.					2									
					Students can be able to design and analyze controllers and lead, lag, lead-lag compensators					2						2			
					Test and apply the knowledge obtained in the subject by Matlab or hardware.											2			
32	15 CS 2208	Computer Networks	2-2-2	15 CS 1001	Understand OSI and TCP/IP models											2	Added	Student to understand the concepts and develop skill to apply for practical implementations
					Analyze MAC layer protocols and LAN technologies					2									
					Implement routing and congestion control algorithms					2						2			
					Understand application layer concepts					2									

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					Design applications using internet protocols											2		
33	15 EM 3103	Embedded Systems	2-2-2	15 EM2202	Able to analyze embedded systems, analyze and program on chip peripherals for a single purpose controller			2								3	Added	Students acquire the basic understanding of digital circuits embedded systems and apply skill for practical applications
					Able to interface and program different off chip peripherals and communication protocols used in embedded systems			2								3		
					Able to understand, evaluate and select appropriate software architectures			2								3		
					Able to analyze and design embedded systems using the features in real time operating systems.			2								3		
					Able to develop a prototype for a real time embedded application using project based labs.			2								3		
34	15 EC 3107	CMOS VLSI Design	2-2-2	15 EC 1101	To understand the VLSI fabrication process and to be able to interact with integrated circuit process engineers		2										Modified	Students acquire the basic understanding of digital circuits suitable for core jobs.
					To analysis the theory and CV characteristics of MOS transistor		2											
					To analysis MOS gate static and switching characteristics		2											
					To design and layout MOS logic circuits											3		

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					Circuit Characterization and Performance Estimation and scaling										3		
					Logic and Fault Testing		2								3		
35	15 EC 3108	Communication Theory-2	2-2-2	15 EC 2205	Understand the principles behind microwave transmissions, impedance matching and waveguides		2									Added	Student can able to understand the various modes of higher communication systems.
					Identify different antennas and their parameters		2										
					Analyze the antenna measurement techniques		2										
					Analyze the microwave components		2										
					Examine the microwave measurements using VNA and SA		2								2		
36	15 EC 3209	Communication Theory-3	2-2-2	15 EC 3108	Describe the types and advantages of spread spectrum modulation formats		2								2	Added	Student can able to understand the various modes of higher communication systems.
					Identify the radio signal propagation mechanism and different fading concepts		2								2		
					Illustrate the growth of communication satellites		2								1		
					Identify the different phases of cellular communication concepts		2								1		
					Understand the optical communication transmission media and principles of operation		2								1		
37	15 EC 4110	Digital Image Processing	2-2-2	15 EC 2206	Acquire the fundamental concepts of a digital image processing system		3									Added	Students acquires the skill regarding

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					Identify and exploit analogies between the mathematical tools used for 1Dand 2D signal analysis and processing by analysing 2D signals in the frequency domain through the Fourier transform										3			Retained	the basics of signal processing applications
					Design and implement with Matlab algorithms for digital image processing operations such as histogram equalization, enhancement										3				
					Design and implement with Matlab algorithms such as restoration, filtering, and de-noising which developsan appreciation for the image processing issues.										3				
					New techniques and be able to apply these techniques to real world problems.										3				
Professional Electives					Communication stream														
38	15 EC 3252	RF System Design	3-0-0	15 EC 3108	Differentiate different RF components and transmission lines							2	2					Retained	Student can able to apply this concepts in designing RF systems like TxRx systems & antennas
					Demonstrate the smith chart applications, multiport networks							2	2						
					Design different RF-Filters based on stability and gain							2	2						
					Develop different types of RF amplifiers							2	2						
39	15 EC 4162	Radiation Systems	3-0-0	15 EC 3108	Demonstrate the radiation mechanism and antenna parameters								2					Retained	Students acquires the skill to work microwave systems and microwave
					Distinguish different types of radiation from apertures								2						

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					Select the antennas and arrays based on the specific application								2				communication systems.
					Evaluate the antenna performance with measurement techniques								2				
40	15 EC 4163	Radar and Navigational AIDS	3-0-0	15 EC 3108	Compare different types of radars and their limitations							2	2			Retained	Students acquires the skill regarding the analysis and design of radar systems that required for core jobs.
					Illustrate the operation of MTI Radar and types of tracking methods							2					
					Differentiate different radar transmitters and receivers							2	2				
					Compare different types of electronic counter measures							2	2				
41	15 EC 4164	Microwave and millimeter Wave Circuits	3-0-0	15 EC 3209	Differentiate different Microwave components								2			Retained	Students acquires the skill to work microwave systems and microwave communication systems.
					Identify transformers and microwave resonators								2	2			
					Design different microwave filters								2	2			
					Distinguish microwave and millimetric wave circuits								2	2			
42	15 EC 4165	EMI/EMC	3-0-0	15 EC 3108	Describe the EMI specifications and standards							2				Retained	Students acquires the skill to work microwave systems and microwave communication systems.
					Demonstrate the EMI control techniques and design guidelines							2					
					Distinguish different passive components for EMC								2				
					Evaluate the EMI measurements using different techniques								2				

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43	15 EC 4166	Cellular Communications	3-0-0	15 EC 2205	Demonstrate different wireless communication systems and radio propagation mechanism									2			Retained	Students acquires the skill regarding the analysis and design of cellular systems.
					Distinguish different equalizers and diversity techniques in propagation									2				
					Illustrate different wireless communication system standards											2		
					Select OFDM in the channel estimation and implementation											2		
44	15 EC 4167	Satellite Communications	3-0-0	15 EC 3108	Demonstrate the basic concepts of satellite communication and orbital mechanics									2			Retained	Students acquires the skill regarding the analysis and design of satellite systems
					Illustrate the satellite subsystems and link design									2				
					Interpret transmitters and receivers usage in tracking and error control mechanism									2				
					Develop the GPS based navigation system										2			
45	15 EC 4168	Optical Communication	3-0-0	15 EC 2205	Dramatize the importance of optical communication									2			Retained	Students acquires the skill regarding the analysis and design of optical systems
					Demonstrate the transmission characteristics of optical fibers, optical transmitters and detectors									2				
					Illustrate the advanced optical fiber systems									2				
					Test the optical fiber transmission and reception mechanism										2			
46	15 EC	Information	3-0-0	15 EC	Describe the basic terminology of information								2				Retained	Students acquires

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	4169	Theory & Coding		2205	theory and coding														
					Demonstrate the encoding of the source output								2						
					Illustrate the importance of error control in coding								2						
					Distinguish different binary cyclic codes and convolution codes								2						
47	15 EC 4170	Software Defined Radio	3-0-0	15 EC 3209	Demonstrate the concept of Software defined radio								2				Added	Students acquires the skill regarding the analysis and design SDR	
					Describe the architecture of SDR								2						
					Illustrate the programming concept of SDR								2						
					Differentiate the segment design tradeoffs											1			
48	15 EC 4171	Fundamentals of Electronics Warfare	3-0-0	15 EC 3209	Distinguish different methods of warfare and target identification								2				Added	Students acquires the skill regarding the analysis and design of various electronic warfare techniques	
					Demonstrate the jamming techniques used in electronic warfare								2						
					Distinguish active jamming and passive jamming								2						
					Judge the false identification of targets and methods to overcome								2						
49	15 EC 4172	Electronic Navigation Systems	3-0-0	15 EC 3108	Differentiate different electronic navigational aids												Added	Students acquires the skill regarding the analysis and design of various electronic warfare	
					Demonstrate the satellite navigation mechanism								2						

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					Illustrate the working principle of GPS antenna system								2					techniques
					Discriminate ship master compass and automatic steering techniques										2				
50	15 EC 4173	Radar	3-0-0	15 EC 3108	Demonstrate different types of radars									2			Added	Students acquires the skill regarding the analysis and design of radar communications
					Illustrate the working principle of MTI radar and its tracking mechanism									2				
					Discriminate radar transmitters and receivers									2				
					Demonstrate basic principles synthetic aperture radar									2				
51	15 EC 4174	Computational Electromagnetics	3-0-0	15 EC 2205	Distinguish different computational techniques								2				Added	Students acquires the skill regarding the methods of computational techniques in electromagnetics
					Illustration on FEM based methodology approach								2					
					Illustration on a one-dimensional introduction to the method of moments											1		
					Illustration on MOM based methodology approach											1		
					Signal Processing Stream													
52	15 EC 3253	Intelligent Systems and Control	3-0-0	15 EC 2206	To establish the theory necessary to understand and use of Intelligence in system control and related constructions.								2				Added	Students acquires the skill regarding applications of fuzzy logics based intelligent control
					To establish the theory necessary to understand the Biological foundations to								2					

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					intelligent systems													system.
					To emphasize on efficient algorithms for ANN based systems.								2					
					To emphasize on efficient algorithms for Fuzzy based systems.								2					
53	15 EC 4175	Adaptive signal Processing	3-0-0	15 EC 2002	To establish the theory necessary to understand and use of Adaptiveness in system control and related constructions.								2			Added	Students acquires the skill regarding applications adaptive signal processing for VLSI circuits
					To establish the theory necessary to understand theWiener filter, search methods and the LMS algorithm								2					
					To emphasize on efficient algorithms for adaptive systems.										2			
					To emphasize on Vector space framework for optimal filtering										2			
54	15 EC 4176	Statistical Signal Processing	3-0-0	15 MT2005	To establish the theory necessary to understand and use Statistics and related constructions.								2			Added	Students acquires the skill regarding statically signal processing	
					To emphasize construction of efficient algorithms for real time applications.								2					
					To study applications in signal processing, communications. The course has computer and research projects involving independent study.								2					
					To study applications in sensing where statistics and								2					

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					probability play an important role.													
55	15 EC 4177	Speech Signal Processing	3-0-0	15 EC 2206	To establish the theory necessary to understand and use speech based systems and related constructions.							2				Added	Students acquires the skill regarding speech signal processing
					To emphasize on efficient algorithms for speech based systems.							2					
					To study applications in speech signal processing, speech based systems. The course has computer and research projects involving independent study.										1		
					To study applications in speech sensing software in mobile.										1		
56	15 EC 4178	Multimedia Signal Processing	3-0-0	15 EC 2002	To establish the theory necessary to understand and use of multimedia in system control and related constructions.							2				Added	Students acquires the skill regarding multimedia signal processing
					To establish the theory necessary to understand and use of Motion Estimation							2					
					To emphasize on efficient algorithms for multimedia based systems.									2			
					To emphasize on Multimedia Content Representation and Retrieval									2			
57	15 EC 4179	Neural Networks and Fuzzy Control	3-0-0	15 EC 2206	To establish the theory necessary to understand and use of Intelligence in system control and related constructions.							2				Added	Students acquires the skill regarding neural networks and fuzzy control
					To establish the theory necessary to understand and							2					

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					use of Back propagation networks in system control and related constructions.														
					To emphasize on efficient algorithms for ANN based systems.											2			
					To emphasize on efficient algorithms for Fuzzy based systems.											2			
					VLSI Stream														
58	15 EC 3251	Analog VLSI Design	3-0-0	15 EC 3107	Understand the functionality and Electrical Properties of MOS and BJT Devices								2					Retained	Students acquires the skill regarding the analysis and design of VLSI circuits.
					Analyzing and design of passive & active current mirrors								2	2					
					Analyze different active MOS loads and frequency responses								2	2					
					Study of the different amplifiers and feedback topologies									2					
59	15 EC 4154	Applications of MEMS Technology	3-0-0	15 EC 3107	Understand the basic concepts of MEMS technology and Micro system design									2				Added	Students acquires the skill regarding the applications of MEMS technologies
					Analyze the fabrication process methods and micro system level packaging									2		1			
					Study of the switching devices for MEMS devices.									2		1			
					Study of the Actuation mechanisms for MEMS devices									2		1			
	15 EC	CAD for VLSI	3-0-0	15 EC	Understand the VLSI design methodologies and									2				Added	Students acquires the skill regarding

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	4155	Design		2204	design rules													the applications of CAD for VLSI design
					Analyze the basic concept of floor planning, routing and simulation									2		2			
					Study of the modeling process									2		2			
					Study of the synthesis process									2		2			
61	15 EC 4156	Design for Testability	3-0-0	15 EC 2204	Understand the basic concept reliability and modeling of faults as a requisite for achieving manufacturing quality of semiconductor devices and then identifies difficulties in VLSI testing									2				Retained	Students acquires the skill regarding the testing of VLSI systems and circuits.
					Analyze the fault tolerant system can be viewed as a design moving through different abstraction levels, a historical view of the development of VLSI system									2					
					Study of the test pattern generation for BIST architectures									2					
					Study of the specific BIST architectures									2					
62	15 EC 4157	Design of Semiconductor Memories	3-0-0	15 EC 3107	Understand the basic semiconductor memories and memory technologies									2				Added	Students acquires the skill regarding the design of semiconductor memories
					Analyze the fault modeling, testing of Ics, memory reliability and radiation effects									2		1			
					Study of the advanced Memory Technologies									2		1			
					Study of the High-Density Memory Packaging Technologies									2		1			
63	15 EC	Low Power VLSI	3-0-0	15 EC	Understand the sources of Power dissipation and								2					Retained	Students acquires the skill regarding

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	4158	Design		3107	approaches to minimize the power dissipation														the design of LOW power VLSI circuits
					Analyze the functionality of Analog and Digital power analysis							2						
					Study of the low power system, clock distribution							2						
					Study of the different Algorithms & Architectural Level Methodologies							2						
64	15 EC 4159	Nano Electronics	3-0-0	15 EC 3107	Understand the recent and past challenges of microelectronic devices							2		1			Added	Students acquires the knowledge and skill regarding the physics of nanoelectronics
					Analyze the Nano computer architectures and fabrication techniques							2		1				
					Study of the Ferro electric thin film properties and gas sensors							2		1				
					Study of the gas sensitive FETs							2		1				
65	15 EC 4160	VLSI Sub System Design	3-0-0	15 EC 2204	Understand the different design and programmable design techniques							2	2				Added	Students acquires the knowledge and skill regarding the design of VLSI sub system.
					Analyze the different memory and array subsystems							2	2					
					Study of the power and clock distribution for systems							2	2					
					Study of the custom, cell based design methodologies							2	2					
66	15 EC 4161	VLSI Technology	3-0-0	15 EC 3107	Understand the basic fabrication process and maintenance of Clean Rooms and Wafer Cleaning process							2					Added	Students acquires the knowledge and skill regarding

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					Analyze the techniques to deposit various films by using Chemical Vapor Deposition							2	2						the fabrication processes of VLSI circuits
					Analyze the techniques to deposit various films by using Physical Vapor Deposition and Multilevel Metallization Techniques							2	2						
					Study of the Rapid Thermal Processing Techniques and Etching Process							2	2						

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MINUTES

Name of the meeting: Board of Studies
of: ECE Department
held on 1/7/2016, at 3.~~2~~ A.M./P.M. under the chairmanship of Sri ASCS Sastry
at: Department Library of ECE

The BOS meeting of ECE Department was held on 05 July, 2016 in Department Library, to approve the following agenda

1. Syllabus modification for 'C' programming and Data Structures - 1st year course - for discussion and approval
2. Course of Thermodynamics - 2016-17 modification/change

The following members were present.

1. Dr. ASCS Sastry, Chairman-BOS
2. B.L. Prakash — B.L. PRAKASH
3. Dr. TV RAMA KRISHNA — 5/7/16
4. Dr. K. Sarat Kumar — 5/7/2016
5. Dr. P.V.V. Kishore — 5/7/16
6. Dr. D. VENKATA RATNAM — 5/7/16
7. Dr. Ranjan K. Senapati — 5/7/16
8. Dr. Habibulla Khan
9. Dr. B. Polaiah
10. Dr K.V. [illegible]
11. Dr. K. Kumar Naik
12. Dr. G.V. Subbarao
13. Dr G Asa Jyothi
14.

BOOK

1. General Body, Board or as the case may be.
2. The name of the Company.
3. The place at which the meeting was held.
4. At the end of the minutes. Chairman to sign mentioning the number of correction made, if any, in recording the minutes of the meeting.

14. Dr. B T P Madhav
15. Dr S K RAO
16 Dr. M. Venu Gopala Rao
17. Dr. K.S. Ramesh

1. It is resolved that the modifications in the Course 'C programming and Data Structures' namely CP&DS-1 and CP&DS-2 (into two courses) is approved for 2016-17 - First year Course Structure.

2. The engineering Science Course of Thermodynamics is the Course that shall not be a part of the 2016-17 Curriculum/structure from that batch.

3 Recommendation from DAC may be incorporated from next regulations.

CHAIRMAN, BOS
DEPARTMENT OF ECE
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KL UNIVERSITY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

INTERNAL NOTE

The Board of Studies meeting of the Department of ECE is scheduled on 5th July 2016 at 3.20 pm in the Department library.

Agenda:

1. Syllabus modification for 'C' Programming and Data Structures – 1st year course – for discussion and approval
2. Course of Thermodynamics – 2016-17 modification/change

All the members are requested to attend the same.

Head of the Department.

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S. No	Course code	Course Name	L-T-P	Pre-req	Description of the Course Outcome	Mapping with SO											Added/ Modified/ Retained	Course Rationale
						a	b	c	d	e	f	g	h	i	j	k		
HUMANITIES & SOCIAL SCIENCES																		
1	15 EN 1101	Rudiments of Communication Skills	0-0-4	NIL	Remember speech sounds and apply stress and intonation rules to enhance pronunciation skills.							1					Added	Course develop the skill required for employability and entrepreneurship
					Understand writing strategies and apply those by using the basic and advanced concepts of grammar.							1						
					Understand the types of texts and tone of the author.							1						
					Understand the importance of interpersonal skills							1						
2	15 EN 1202	Interpersonal Communication Skills	0-0-4	NIL	Understand the method of identifying the meaning of words from the context and form sentences using words.							1					Added	Course develop the skill required for employability and entrepreneurship
					Understand and analyze seven types of reading techniques and improve reading speed.							2						
					Understand and apply writing strategies for office/ formal communication.							2						
					Understand and analyze different cultures and the importance of empathy in cross-cultural communication.				1			1						

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3	15 EN 2103	Professional Communication Skills	0-0-4	NIL	Understand the concept of Group Discussion and listen and speak effectively during the discussion.						1					Added	Course develop the skill required for employability and entrepreneurship
					Understand and improve learners' competency in competitive English and apply the principles of grammar in real life contexts.						2						
					Understand skimming & scanning, and apply the types of reasoning in comprehending the information.						3						
					Understand the mechanics and application of presentation skills.					1							
4	15 EN 2204	Employability Skills	0-0-4	NIL	Analyze one's own strength as a speaker/ Communicator and use discretion while listening.						2					Added	Course develop the skill required for employability and entrepreneurship
					Apply and analyze various concepts of writing strategies in professional communication skills like, reports, resume and minutes of the meeting.						3						
					Understand the organization of the passage and also analyze the tone, attitude and style of the author.						2						
					Acquire knowledge of and apply people skills in various social organizational and corporate ambiences					2							

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3	15 EN 2103	Professional Communication Skills	0-0-4	NIL	Understand the concept of Group Discussion and listen and speak effectively during the discussion.							1					Added	Course develop the skill required for employability and entrepreneurship
					Understand and improve learners' competency in competitive English and apply the principles of grammar in real life contexts.							2						
					Understand skimming & scanning, and apply the types of reasoning in comprehending the information.							3						
					Understand the mechanics and application of presentation skills.						1							
4	15 EN 2204	Employability Skills	0-0-4	NIL	Analyze one's own strength as a speaker/ Communicator and use discretion while listening.							2					Added	Course develop the skill required for employability and entrepreneurship
					Apply and analyze various concepts of writing strategies in professional communication skills like, reports, resume and minutes of the meeting.							3						
					Understand the organization of the passage and also analyze the tone, attitude and style of the author.							2						
					Acquire knowledge of and apply people skills in various social organizational and corporate ambiences						2							

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5	15 EN 3105	Verbal and Quantitative Reasoning	0-0-4	NIL	Understand the method of identifying synonyms and antonyms and analyze the meaning of a word from the context.								1			Added	Course develop the skill in verbal and quantitative reasoning
					Analyze issues and arguments in the process of critical reasoning and apply grammar rules to correct sentences.								1				
					Apply the Concepts of basic Algebra and their importance while solving the problems								1				
					Apply the short-cut methods on the concepts of different models in Calendars, Clocks, Blood relations and various types of arrangements								1				
6	15 EN 3206	Corporate Communication Skills	0-0-4	NIL	Understand and analyze the depth of a topic and use the advanced levels in creative speaking and debating.							1				Added	Course develop the skill required for employability and entrepreneurship
					Understand and analyze various strategies involved in writing an essay and apply various styles in writing.							2					
					Understand and analyze the given text critically and answer questions on critical reasoning based on the given information.							3					
					Acquire knowledge on various employability skills & analyze a situation and develop adaptability.						3	3					
					Apply the Concepts of basic geometry and their							2					

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					importance while solving the problems													
7	15 GN 1001	Ecology and Environment	2-0-0	NIL	Understand the importance of Environmental education and conservation of natural resources.								1			Modified	Course enhances the environmental education suitable for professional jobs and entrepreneurship
					Understand the importance of ecosystems and biodiversity.									1				
					Apply the environmental science knowledge on solid waste management, disaster management and EIA process.								2					
8	15 GN 1002	Human Values	2-0-0	NIL	Understand and identify the basic aspiration of human beings							1				Modified	Course enhances the ethics suitable for professional jobs and entrepreneurship
					Envisage the roadmap to fulfill the basic aspiration of human beings.							2						
					Analyze the profession and his role in this existence.							2						
9	15 MT 1001	Single Variable Calculus and Matrix Algebra	2-2-2	NIL	Formulate physical laws and relations mathematically in the form of first order differential equations and identify a method for solving and interpreting the results.				1							Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Formulate physical laws and relations mathematically in the form of second/higher order differential equations and identify a method for solving and interpreting the results.				1									
					Provide solutions for Fourier series of periodic/ non-periodic phenomenon in models involving differential equations.				1									

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					Apply numeric solution methods for a system of linear algebraic equations and application oriented matrix eigenvalue problems.					1									
					Verify the solution of problems through MATLAB.												1		
10	15 MT 1203	Multivariate Calculus	2-2-2	NIL	Determine the maximum and minimum values for the function involving two variables					2								Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Calculate the length of the arc, area, volume of the surface of a solid revolution					2									
					Model the given phenomena as a partial differential equations of first and second orders												2		
					Solve the partial differential equations by analytical and finite difference methods					2									
					Verify the solution of problems through MATLAB.												2		
11	15 MT 2005	Probability and Stochastic Models	2-2-2	NIL	Construct the probability distribution of a random variable, based on a real-world situation, and use it to compute expectation and variance												2	Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Predict the relationship between two variables and construct the linear and non-linear regression lines for the given data					2									
					Model the Single and multi servermarkovian queuing models with finite and infinite capacity.					2									

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					Verify and validate the simulation models.											2		
					Verify the solution of problems through MATLAB/MINITAB.											2		
12	15 ME 1001	Mechanics	2-2-2	NIL	Apply the concept of forces, governing static equations and analyze planer system of forces. Apply different analytical methods on spatial system of forces and analyzing them	2											Added	Students acquire the skill to apply various mechanical concepts to practical problems
					Understanding the concepts of planar and non-planar system of parallel forces and analyzing them. estimate moment of inertia of lamina and material bodies	2												
					Analyzing the rigid bodies under translation and rotation with and without considering forces.					1								
					Understanding the engineering mechanics physical systems prepare and demonstrate the models with the help of mechanics concepts to 0solve the engineering problems					1								
					Apply the concepts of mechanics and carryout different experiments and analyze the results		2											
13	15 PH 1001	Engineering Materials	2-2-2	NIL	Understand the concepts of crystallography and crystalline imperfections in order to determine crystal structures and to identify defects in crystals			1									Added	The course enhances the skill to understand and apply various physical properties of materials.
					Understand electrical and optical properties of materials and apply them to know various mechanisms involved in electrical, electronic,			1										

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					optical optoelectronic devices.													
					Understand mechanical and thermal properties of materials and apprehend their importance in identification of materials for specific engineering applications			1										
					Understand magnetic properties of materials and apply them to know various mechanisms involved in magnetic memory devices and transformers.			1										
					Understand various properties of materials and apply the knowledge to execute the related experiments to get hands on experience and also to develop some inter disciplinary projects.			1										
14	15 CY 1001	Engineering Chemistry	2-2-2	NIL	Predict potential complications from combining various chemicals or metals in an engineering setting.			1								Modified	The course enhances the skill to understand and apply various chemical properties of materials.	
					Discuss fundamental aspects of electrochemistry and materials science relevant to corrosion phenomena.			1										
					Examine water quality and select appropriate purification technique for intended problem.			1										
					Apply phase rule, polymers, conducting polymers and nano chemistry to engineering		1											

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					processes.													
					An ability to analyze & generate experimental skills.		1											
15	15 BT 1001	Biology for Engineers	2-0-0	NIL	Acquire the Knowledge of basic biology							1		2		Added	The course enhances the skill to understand and apply various biological properties in developing sensors systems
					Acquire the Knowledge of Human Biological Systems							1		2			
					Acquire Knowledge on Microorganisms							1		2			
					Acquire Knowledge on Biosensors												
16	15 EE 1201	Fields & Networks	2-2-2	NIL	Understand the circuit elements, kirchhoff's law and theorems to solve the networks	1									1	Added	Students understand the network properties and field theory in various circuits and develop the skill for practical applications
					Apply the procedure to determine form factor and peak factor to different symmetrical & unsymmetrical waves.	2											
					Apply vector algebra to field fundamentals to analyze electric and magnetic field distributions	2											
					Apply Maxwell's equations for static and time varying fields	2											
					Test and Analyze the concepts learned in fields and networks by conducting experiments or by any simulation software's	2											
ENGINEERING SCIENCES																		
17	15 GN 1004	Introduction to Engineering	2-0-2	NIL	Understand the basic principles of engineering design							2				Added	To understand basic principles of

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					Understand the aspects of critical thinking and problem solving in engineering								2					engineering design and apply the skills to practical applications
					Apply to knowledge of critical thinking to frame real-world problems and provide basic solution approach to such problems from engineering perspective						3							
					Understand and analyze the possible career options in Engineering and develop strategic plan, career targets and mechanism to achieve the same.													
18 (a)	15 CS 1101	C Programming & Data Structures-1	2-4-2	NIL	Illustrate how problems are solved using computers and programming.	2				2							Modified	Students understand the concepts and apply the skill to practical applications
					Illustrate and use Control Flow Statements in C.	2				2								
					Interpret & Illustrate user defined C functions and different operations on list of data.	2				2								
					Implement Linear Data Structures and compare them.	2	2			2								
					Apply the knowledge obtained by the course to solve real world problems.	2	2			2								
18 (b)	15 CS 1201	C Programming & Data Structures-2	2-4-2	15CS1101	Solve typical problems using computers and programming.	2	2			2							Added	Students understand the concepts and apply the skill to practical
					Apply linear Data Structures in solving problems.	2	2			2								

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					Implement Non - Linear Data Structures.	2	2			2							applications
					Implement Height balanced trees & Hashing.	2	2			2							
					Apply the knowledge obtained by the course to solve real world problems.	2	2			2							
19	15 ME 1002	Engineering Graphics	0-0-6	NIL	Draft orthographic Projections, Isometric views, projection of planes, Manually and prepare Models in workshop by using drawings.											2	Retained	Students acquire the skills to draft and modeling of physical designs using CAD.
					Draft ortho graphic projections ,isometric views, projection of planes using Auto cad. Draft projection of solids Manually and by using AutoCAD and prepare Models in workshop by using different workshop trades											2		
					Draft Development of surfaces of solid and sections of solid Manually											2		
					Practicing house wiring through Auto Cad											2		
					Develop 2D & 3D components using Auto Cad Software		2											
20	15 GN 1003	Measurements	0-0-4	NIL	Understand and apply the fundamentals of a measurement system, characteristics, and metrology using simulation and experimentation tools.	2	2										Modified	Course develops the understanding in measuring various physical quantities and develop skill through practical experiments.
					Understand various electrical & computer parameters, and apply different measuring techniques on various electrical parameters using simulation and experimentation tools.	2	2											

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					Understand electronic & electro-physiological parameters, and apply measuring techniques on electronic parameters using simulation and experimentation tools.	2	2												
					Understand and apply different measuring techniques on civil and mechanical parameters using simulation and experimentation tools.	2	2												
					Apply the theoretical concepts to measure different parameters		2												
21	15 CS 2002	Object Oriented Programming	2-2-2	NIL	Understand Basic Concepts of OOP, introduction to classes and objects through Java Language and apply.					2							Retained	Students understand the concepts of OOP and develop to apply for practical implementation
					Understand the concepts of constructors, Overloading, parameter passing, access control, Inheritance and apply.					2								
					Understand Packages, Interfaces, and Exception Handling and apply.					2								
					Understand I/O Streams & apply and understand Basic Concepts of Multi -Threading											3		
					Apply OOP concepts for developing an application											3		
22	15 EC 2002	Signal Analysis	2-2-2	NIL	Demonstrate signals and their Spectra 2	2											Added	Students acquires the skill regarding the basics of signal processing
					Analyze discrete time systems	2												
					Design filters to cater signal analysis needs											2		

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					Analyze non stationary signals in time											2		
					Analyze non stationary signals in frequency domains											2		
23	15 CS 2003	Discrete Mathematics	2-2-2	NIL	Understand sets, relations, functions and discrete structures , Count discrete event occurrences	2											Added	Students develop the skill to apply various basic mathematics for practical electronics and communication applications.
					Apply Propositional logic and First order logic to solve problems	2												
					Formulate and solve recurrence relations, apply algebraic structures and lattices.											2		
					To identify the basic properties of graphs and trees and model simple applications											2		
					Relate practical examples to the appropriate set, function or relation model and interpret the associated operations and terminology in context											2		
24	15EC 1101	Digital System Design	2-2-2	NIL	Understand numerical and character representation in digital logic, number system, data codes and the corresponding design of arithmetic circuitry.					2							Employability	Students acquire the basic understanding of digital circuits suitable for core jobs.
					Understanding Logic gates, Logic theorems, Boolean algebra and SOP/POS expressions.					2								
					Combinational and sequential systems design using standard gates and filp-flops and minimization methods					2						2		

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					Verilog HDL design for logic gates, combinational and sequential Logic Functions.					2					2				
					Concepts of Programmable Logic devices.					2					2				
25	15 EM 2001	Computer Organization and Architecture	2-2-2	15EC1101	Understand the functionality and design the CPU functional units - control unit, registers, the arithmetic and logic unit, the instruction execution unit, and the interconnections among these components.			2							2	Added	Course develop the skill to analyze and realize the operation of modern engineering tools
					Understand, analyze and design main, cache and virtual memory organizations.			2							2		
					Understand, analyze and design different types of I/O transfer techniques.			2							2		
					Understand the design issues of RISC and CISC CPUs and the design issues of pipeline architectures.			2							2		
					Able to Design combinational and sequential circuits using LOGISIM			2							2		
2	15 EC 2103	Analog Electronic Circuit Design	2-4-2	NIL	Able to Design combinational and sequential circuits using LOGISIM			3								Added	Acquire the skill to apply various practical problem of circuit design
					Understanding the concepts of various diodes and their applications.			3									
					BJT concepts as operation, biasing and frequency response			3							3		
					FET concepts as operation, biasing and			3							3		

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					frequency response														
					Feedback concepts and their analysis			3								3			
					Concepts of various oscillators and applications.			3								3			
27	15 EM 2202	Processors and Controllers	2-2-2	15EC1101	Able to understand and analyze the architectural features of CISC type of General purpose processor Intel 8086 Microprocessor.					2						3	Added	Students acquires the skill to work with microprocessors and microcontrollers
					Able to understand and analyze the architectural features of CISC type of microcontroller - Intel 8051Microcontroller.					2						3		
					Able to understand and analyze the architectural features of RISC type of microcontroller – PIC Microcontroller.					2						3		
					Able to program 8086 microprocessor, 8051 and PIC microcontrollers in assembly language using TASM, KEIL, MPLAB and Proteus tools.					2						3		
					Able to Develop a real time application using 8051& PIC Microcontrollers through project based labs.					2						3		
28	15 EC 2204	Design with CPLD & FPGA	2-2-2	15EC1101	Study and design of combinational and sequential circuits using PLDs and state machines.			2									Added	Students acquire the basic understanding of digital circuits suitable for core jobs.
					Understand Full-custom & Semi Custom design methodologies of for designing different PLD architectures.			2								2		

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					To study PLD structures and design process			2											
					Study of different CPLD and FPGA architectures			2											
					To understand different physical process.			2								2			
29	15 EC 2205	Communication Theory-1	2-2-2	15EC2103	have a good understanding of both time and frequency domain representations of signals;	2										2	Added	Student can able to understand the various modes of higher communication systems.
					have a good understanding of analog modulation and demodulation techniques;	2										2		
					have a good understanding of digital modulation and demodulation techniques; and	2										2		
					Understanding pulse modulation systems	2										2		
					Understand and be able to implement noise and error analysis of an analogue system.	2										2		
					Understand and be able to implement noise and error analysis of an analogue or digital telecommunication system.	2										2		
30	15 EC 2206	Signal Processing	2-2-2	15EC2002	Understand various signals and model physical process using them.				2								Added	Students acquires the skill regarding the basics of signal processing applications
					Acquaint with various a transformation methods and their potential for applicability in various signal analysis conditions				2									
					Demonstrate sampling and its potential applications in communications, discrete				2									

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					signal acquisition etc												
					Evaluate discrete system behavior and its response to facilitate system design.				2								
					Design a low pass discrete time system to meet noise elimination like applications				2						3		
					Analyze non stationary signals and analyze them in both time frequency domains.				2						3		
31	15 EE 2207	Control Systems	2-2-2	NIL	Students can be able to understand control system concepts such as open, closed loop systems, transfer function approach, mathematical modeling of physical systems and can understand analyze the similarities between synchros and ac generators				1							Modified	Students acquire the skill to apply the concepts to practical applications
					Students can be able to Analyze the time domain and frequency response of physical systems				2								
					Students can be able to understand and analyze stability of given transfer functions in time and Frequency domain and can be able to analyze the process of Converting state space equations into transfer function for the given model.				2								
					Students can be able to design and analyze controllers and lead, lag, lead-lag compensators				2						2		
					Test and apply the knowledge obtained in the										2		

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					subject by Matlab or hardware.														
32	15 CS 2208	Computer Networks	2-2-2	15 CS 1001	Understand OSI and TCP/IP models											2	Added	Student to understand the concepts and develop skill to apply for practical implementations
					Analyze MAC layer protocols and LAN technologies				2										
					Implement routing and congestion control algorithms				2							2			
					Understand application layer concepts				2										
					Design applications using internet protocols											2			
33	15 EM 3103	Embedded Systems	2-2-2	15 EM2202	Able to analyze embedded systems, analyze and program on chip peripherals for a single purpose controller			2								3	Added	Students acquire the basic understanding of digital circuits embedded systems and apply skill for practical applications
					Able to interface and program different off chip peripherals and communication protocols used in embedded systems			2								3			
					Able to understand, evaluate and select appropriate software architectures			2								3			
					Able to analyze and design embedded systems using the features in real time operating systems.			2								3			
					Able to develop a prototype for a real time embedded application using project based labs.			2								3			
34	15 EC	CMOS VLSI	2-2-2	15 EC	To understand the VLSI fabrication process and to be able to interact with integrated		2										Modified	Students acquire the basic

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	3107	Design		1101	circuit process engineers													understanding of digital circuits suitable for core jobs.
					To analysis the theory and CV characteristics of MOS transistor		2											
					To analysis MOS gate static and switching characteristics		2											
					To design and layout MOS logic circuits											3		
					Circuit Characterization and Performance Estimation and scaling											3		
					Logic and Fault Testing		2									3		
35	15 EC 3108	Communication Theory-2	2-2-2	15 EC 2205	Understand the principles behind microwave transmissions, impedance matching and waveguides		2										Added	Student can able to understand the various modes of higher communication systems.
					Identify different antennas and their parameters		2											
					Analyze the antenna measurement techniques		2											
					Analyze the microwave components		2											
					Examine the microwave measurements using VNA and SA		2									2		
36	15 EC 3209	Communication Theory-3	2-2-2	15 EC 3108	Describe the types and advantages of spread spectrum modulation formats		2									2	Added	Student can able to understand the various modes of higher communication systems.
					Identify the radio signal propagation mechanism and different fading concepts		2									2		
					Illustrate the growth of communication		2									1		

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					satellites													
					Identify the different phases of cellular communication concepts		2								1			
					Understand the optical communication transmission media and principles of operation		2								1			
37	15 EC 4110	Digital Image Processing	2-2-2	15 EC 2206	Acquire the fundamental concepts of a digital image processing system		3									Added	Students acquires the skill regarding the basics of signal processing applications	
					Identify and exploit analogies between the mathematical tools used for 1Dand 2D signal analysis and processing by analysing 2D signals in the frequency domain through the Fourier transform		3								3			
					Design and implement with Matlab algorithms for digital image processing operations such as histogram equalization, enhancement		3								3			
					Design and implement with Matlab algorithms such as restoration, filtering, and de-noising which developsan appreciation for the image processing issues.		3								3			
					New techniques and be able to apply these techniques to real world problems.		3								3			
Professional Electives					Communication stream													
38	15 EC 3252	RF System Design	3-0-0	15 EC 3108	Differentiate different RF components and transmission lines							2	2			Retained	Student can able to apply this concepts in designing RF systems like TxRx	
					Demonstrate the smith chart applications, multiport networks							2	2					

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					Design different RF-Filters based on stability and gain									2	2					systems & antennas
					Develop different types of RF amplifiers									2	2					
39	15 EC 4162	Radiation Systems	3-0-0	15 EC 3108	Demonstrate the radiation mechanism and antenna parameters										2				Retained	Students acquires the skill to work microwave systems and microwave communication systems.
					Distinguish different types of radiation from apertures										2					
					Select the antennas and arrays based on the specific application										2					
					Evaluate the antenna performance with measurement techniques										2					
40	15 EC 4163	Radar and Navigational AIDS	3-0-0	15 EC 3108	Compare different types of radars and their limitations									2	2				Retained	Students acquires the skill regarding the analysis and design of radar systems that required for core jobs.
					Illustrate the operation of MTI Radar and types of tracking methods									2						
					Differentiate different radar transmitters and receivers									2	2					
					Compare different types of electronic counter measures									2	2					
41	15 EC 4164	Microwave and millimeter Wave Circuits	3-0-0	15 EC 3209	Differentiate different Microwave components										2				Retained	Students acquires the skill to work microwave systems and microwave communication systems.
					Identify transformers and microwave resonators										2	2				
					Design different microwave filters										2	2				
					Distinguish microwave and millimetric wave circuits										2	2				

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42	15 EC 4165	EMI/EMC	3-0-0	15 EC 3108	Describe the EMI specifications and standards								2				Retained	Students acquires the skill to work microwave systems and microwave communication systems.
					Demonstrate the EMI control techniques and design guidelines								2					
					Distinguish different passive components for EMC									2				
					Evaluate the EMI measurements using different techniques									2				
43	15 EC 4166	Cellular Communications	3-0-0	15 EC 2205	Demonstrate different wireless communication systems and radio propagation mechanism									2			Retained	Students acquires the skill regarding the analysis and design of cellular systems.
					Distinguish different equalizers and diversity techniques in propagation									2				
					Illustrate different wireless communication system standards											2		
					Select OFDM in the channel estimation and implementation											2		
44	15 EC 4167	Satellite Communications	3-0-0	15 EC 3108	Demonstrate the basic concepts of satellite communication and orbital mechanics									2			Retained	Students acquires the skill regarding the analysis and design of satellite systems
					Illustrate the satellite subsystems and link design									2				
					Interpret transmitters and receivers usage in tracking and error control mechanism									2				
					Develop the GPS based navigation system										2			
45	15 EC 4168	Optical Communication	3-0-0	15 EC 2205	Dramatize the importance of optical communication									2			Retained	Students acquires the skill regarding

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					Demonstrate the transmission characteristics of optical fibers, optical transmitters and detectors								2					the analysis and design of optical systems
					Illustrate the advanced optical fiber systems								2					
					Test the optical fiber transmission and reception mechanism									2				
46	15 EC 4169	Information Theory & Coding	3-0-0	15 EC 2205	Describe the basic terminology of information theory and coding							2				Retained	Students acquires the skill regarding the security of information for wireless communications.	
					Demonstrate the encoding of the source output							2						
					Illustrate the importance of error control in coding							2						
					Distinguish different binary cyclic codes and convolution codes							2						
47	15 EC 4170	Software Defined Radio	3-0-0	15 EC 3209	Demonstrate the concept of Software defined radio							2				Added	Students acquires the skill regarding the analysis and design SDR	
					Describe the architecture of SDR							2						
					Illustrate the programming concept of SDR							2						
					Differentiate the segment design tradeoffs										1			
48	15 EC 4171	Fundamentals of Electronics Warfare	3-0-0	15 EC 3209	Distinguish different methods of warfare and target identification							2				Added	Students acquires the skill regarding the analysis and design of various electronic warfare techniques	
					Demonstrate the jamming techniques used in electronic warfare							2						
					Distinguish active jamming and passive							2						

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					jamming													
					Judge the false identification of targets and methods to overcome							2					
49	15 EC 4172	Electronic Navigation Systems	3-0-0	15 EC 3108	Differentiate different electronic navigational aids											Added	Students acquires the skill regarding the analysis and design of various electronic warfare techniques
					Demonstrate the satellite navigation mechanism							2					
					Illustrate the working principle of GPS antenna system							2					
					Discriminate ship master compass and automatic steering techniques									2			
50	15 EC 4173	Radar	3-0-0	15 EC 3108	Demonstrate different types of radars								2			Added	Students acquires the skill regarding the analysis and design of radar communications
					Illustrate the working principle of MTI radar and its tracking mechanism								2				
					Discriminate radar transmitters and receivers								2				
					Demonstrate basic principles synthetic aperture radar								2				
51	15 EC 4174	Computational Electromagnetics	3-0-0	15 EC 2205	Distinguish different computational techniques							2				Added	Students acquires the skill regarding the methods of computational techniques in electromagnetics
					Illustration on FEM based methodology approach							2					
					Illustration on a one-dimensional introduction to the method of moments										1		

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					Illustration on MOM based methodology approach										1			
					Signal Processing Stream													
52	15 EC 3253	Intelligent Systems and Control	3-0-0	15 EC 2206	To establish the theory necessary to understand and use of Intelligence in system control and related constructions.							2				Added	Students acquires the skill regarding applications of fuzzy logics based intelligent control system.
					To establish the theory necessary to understand the Biological foundations to intelligent systems							2					
					To emphasize on efficient algorithms for ANN based systems.								2				
					To emphasize on efficient algorithms for Fuzzy based systems.								2				
53	15 EC 4175	Adaptive signal Processing	3-0-0	15 EC 2002	To establish the theory necessary to understand and use of Adaptiveness in system control and related constructions.								2			Added	Students acquires the skill regarding applications adaptive signal processing for VLSI circuits
					To establish the theory necessary to understand theWiener filter, search methods and the LMS algorithm								2				
					To emphasize on efficient algorithms for adaptive systems.										2		
					To emphasize on Vector space framework for optimal filtering										2		
54	15 EC 4176	Statistical Signal Processing	3-0-0	15 MT2005	To establish the theory necessary to understand and use Statistics and related constructions.								2			Added	Students acquires the skill regarding statically signal

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					To emphasize construction of efficient algorithms for real time applications.									2					processing
					To study applications in signal processing, communications. The course has computer and research projects involving independent study.									2					
					To study applications in sensing where statistics and probability play an important role.									2					
55	15 EC 4177	Speech Signal Processing	3-0-0	15 EC 2206	To establish the theory necessary to understand and use speech based systems and related constructions.								2					Added	Students acquires the skill regarding speech signal processing
					To emphasize on efficient algorithms for speech based systems.								2						
					To study applications in speech signal processing, speech based systems. The course has computer and research projects involving independent study.											1			
					To study applications in speech sensing software in mobile.											1			
56	15 EC 4178	Multimedia Signal Processing	3-0-0	15 EC 2002	To establish the theory necessary to understand and use of multimedia in system control and related constructions.								2					Added	Students acquires the skill regarding multimedia signal processing
					To establish the theory necessary to understand and use of Motion Estimation								2						
					To emphasize on efficient algorithms for										2				

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					multimedia based systems.														
					To emphasize on Multimedia Content Representation and Retrieval										2				
57	15 EC 4179	Neural Networks and Fuzzy Control	3-0-0	15 EC 2206	To establish the theory necessary to understand and use of Intelligence in system control and related constructions.							2				Added	Students acquires the skill regarding neural networks and fuzzy control
					To establish the theory necessary to understand and use of Back propagation networks in system control and related constructions.							2							
					To emphasize on efficient algorithms for ANN based systems.										2				
					To emphasize on efficient algorithms for Fuzzy based systems.										2				
					VLSI Stream														
58	15 EC 3251	Analog VLSI Design	3-0-0	15 EC 3107	Understand the functionality and Electrical Properties of MOS and BJT Devices							2				Retained	Students acquires the skill regarding the analysis and design of VLSI circuits.
					Analyzing and design of passive & active current mirrors							2	2						
					Analyze different active MOS loads and frequency responses							2	2						
					Study of the different amplifiers and feedback topologies								2						
59	15 EC	Applications of	3-0-0	15 EC	Understand the basic concepts of MEMS								2			Added	Students acquires

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	4154	MEMS Technology		3107	technology and Micro system design														the skill regarding the applications of MEMS technologies
					Analyze the fabrication process methods and micro system level packaging								2		1				
					Study of the switching devices for MEMS devices.								2		1				
					Study of the Actuation mechanisms for MEMS devices								2		1				
	15 EC 4155	CAD for VLSI Design	3-0-0	15 EC 2204	Understand the VLSI design methodologies and design rules								2				Added		Students acquires the skill regarding the applications of CAD for VLSI design
					Analyze the basic concept of floor planning, routing and simulation								2		2				
					Study of the modeling process								2		2				
					Study of the synthesis process								2		2				
61	15 EC 4156	Design for Testability	3-0-0	15 EC 2204	Understand the basic concept reliability and modeling of faults as a requisite for achieving manufacturing quality of semiconductor devices and then identifies difficulties in VLSI testing								2				Retained		Students acquires the skill regarding the testing of VLSI systems and circuits.
					Analyze the fault tolerant system can be viewed as a design moving through different abstraction levels, a historical view of the development of VLSI system								2						
					Study of the test pattern generation for BIST architectures								2						
					Study of the specific BIST architectures								2						

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62	15 EC 4157	Design of Semiconductor Memories	3-0-0	15 EC 3107	Understand the basic semiconductor memories and memory technologies								2			Added	Students acquires the skill regarding the design of semiconductor memories
					Analyze the fault modeling, testing of Ics, memory reliability and radiation effects								2		1		
					Study of the advanced Memory Technologies								2		1		
					Study of the High-Density Memory Packaging Technologies								2		1		
63	15 EC 4158	Low Power VLSI Design	3-0-0	15 EC 3107	Understand the sources of Power dissipation and approaches to minimize the power dissipation							2				Retained	Students acquires the skill regarding the design of LOW power VLSI circuits
					Analyze the functionality of Analog and Digital power analysis							2					
					Study of the low power system, clock distribution							2					
					Study of the different Algorithms & Architectural Level Methodologies							2					
64	15 EC 4159	Nano Electronics	3-0-0	15 EC 3107	Understand the recent and past challenges of microelectronic devices							2		1		Added	Students acquires the knowledge and skill regarding the physics of nanoelectronics
					Analyze the Nano computer architectures and fabrication techniques							2		1			
					Study of the Ferro electric thin film properties and gas sensors							2		1			
					Study of the gas sensitive FETs							2		1			
65	15 EC 4160	VLSI Sub System Design	3-0-0	15 EC 2204	Understand the different design and programmable design techniques							2	2			Added	Students acquires the knowledge

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					Analyze the different memory and array subsystems								2	2					and skill regarding the design of VLSI sub system.
					Study of the power and clock distribution for systems								2	2					
					Study of the custom, cell based design methodologies								2	2					
66	15 EC 4161	VLSI Technology	3-0-0	15 EC 3107	Understand the basic fabrication process and maintenance of Clean Rooms and Wafer Cleaning process								2					Added	Students acquires the knowledge and skill regarding the fabrication processes of VLSI circuits
					Analyze the techniques to deposit various films by using Chemical Vapor Deposition								2	2					
					Analyze the techniques to deposit various films by using Physical Vapor Deposition and Multilevel Metallization Techniques								2	2					
					Study of the Rapid Thermal Processing Techniques and Etching Process								2	2					

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MINUTES

Name of the meeting: Board of Studies

of: ECE Department

held on 15/12/2016, at 3.20 A.M./P.M. under the chairmanship of Sri ASCS Sastry

at: Department Library of ECE

The BOS meeting of ECE department was held on 15/12/16 in the Department library to approve the following agenda.

1. Syllabus/content modification of Analog Electronic Circuit Design (15EC2103)

The following members were present

1) Dr. A.S.C.S. Sastry Chairman-BOS
2) B.L.PRAKASH ALE-HOD - By
3) Dr. Habibullakhan - Dean-SA
4) Dr. T.V.Ramakrishna -
5) Dr. K.S.Ramesh -
6) Dr. K.S.N. Murthy - 15/12/2016
7) Dr. S. Lakshmi Narayana -
8) Dr. K. Sarat Kumar - 15/12/2016
9) Dr. M.V. Gopala Rao -
10) Dr. D. Venkata Ratnam -
11) Dr. G.V. Subba Rao -
12) Dr. K. Kumar Naik -
13) Dr. P.V.V. Kishore -
14) Dr. B.T.P. Madhav -

BOOK

1. General Body, Board or as the case may be.
2. The name of the Company.
3. The place at which the meeting was held.
4. At the end of the minutes. Chairman to sign mentioning the number of correction made, if any, in recording the minutes of the meeting.

15) Dr. S. Koteswara Rao

16) Dr. K. Srinivasa Rao

17) Dr. K. Ch. Sri Kavya

18) Dr. B. Polaiah

19) Dr. V. Rajesh

20) Dr. Yogesh Misra

21) Dr. D. Bhattacharya

22) Mr. M. Venkata Narayana

23) Mr. D S. Ram Kiran

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VADDESWARAM
Guntur Dt., A.P., India.

1) The members felt that there can be modifications either in the content by proper trimming of the same or there can be change in the modalities of the course delivery.

2) It is resolved that the members come up with suitable justifications for modifications by the next BOS meeting and there can be deliberations for the change from the next academic Year.

KL UNIVERSITY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

MINUTES OF THE BOARD OF STUDIES MEETING

Board of Studies of the Department of Electronics and Communication Engineering met on 15th December 2016 in the Department Library to discuss the follow the issues related to the changes / modifications required in the curriculum for the coming semester/s and came out with the following resolutions:

1. The course of Analog Electronic Circuit Design (15 EC 2103) was being felt as a heavy course (content wise) by the students.

   The members felt that there can be modifications either in the content by proper trimming the same or there can be a change in the modalities of the course delivery.

   Hence it was resolved that the members come up with suitable justifications for modifications by the next BOS meeting and the can be deliberations for the change from the next academic year.

Sl. No.	Name of the Faculty	Designation	Signature
1	Dr.Habibulla Khan	Dean - SA	
2	Dr.A.S.C.S.Sastry	HOD	
3	Prof B L Prakash	Professor & A.HOD	
4	Dr.T.V.Rama Krishna	Professor& Asso.Dean	
5	Dr.K.S.Ramesh	Professor	
6	Dr.K.S.N.Murthy	Professor	
7	Dr.S.Lakshmi Narayana	Professor	
8	Dr.K.Sarat Kumar	Professor, Dean (P&D)	
9	Dr.M.Venugopal Rao	Professor, Asso.Dean	
10	Dr.Venkata Ratnam D	Professor	
11	Dr.G.V.Subbarao	Professor	
12	Dr.K.Kumar Naik	Professor	
13	Dr.P.Venkat Vijay Kishore	Professor	
14	Dr.B.T.P.Madhav	Professor	
15	Dr.Ranjan Kumar Senapati	Professor	
16	Dr.S.Koteswararao	Professor	
17	Dr.K.Srinivasarao	Professor	
18	Dr.K.Ch.Sri Kavya	Professor & A| Dean.	
19	Dr.B.Polaiah	Professor	
20	Dr.V.Rajesh	Professor & Principal ASL	
21	Dr.Yogesh Misra	Professor	
22	Dr.Debmalya Bhattacharya	Professor	
23	Mr. M.Venkat Narayana	Assoc Prof	
24	Mr.D.S.Ram Kiran	Assoc Prof	
25.	Dr.T.Govardhani	Prof & A|Dean	

Chairman, BOS(ECE)

CHAIRMAN, BOS
DEPARTMENT OF ECE

MINUTES

Name of the meeting: BoS Meeting
of: ECE Department
held on 10th Jun 2017, at 10.30 A.M./P.M. under the chairmanship of Sri Dr. ASCS Sastry
at: Department Library of ECE

This BoS Meeting was held on 10th June 2017 at Department Library of ECE. The Agenda Points are attached here

1) Modifications to the 2015-16 curriculum
2) Curriculum structure/content for 2017 admitted batch
3) DAC recommendations are approved for regulation 2017

The Following members were Present

1)	Dr. ASCS Sastry	Chairman - BoS	–
2)	Dr. Habibulla Khan	Dean - SA	–
3)	Dr. V. Rajesh	Principal - ASC	–
4)	Dr. M. Venugopalarao	Prof & Assoc. Dean	–
5)	Dr. G.V. Subbarao	Professor	–
6)	Dr. K Srinivasarao	PS & MEMS PG Head	–
7)	Dr. P V V Kishore	Prof. Signal Processing PG Head	–
8)	Dr. D.V. Ratnam	Professor	–
9)	Dr. P. Satyanarayana	Professor & Alt. Head	–
10)	Dr. B T P Madhav	Professor & CSPG Head	–

Minutes of the meeting of BOS held on 10th June 2016

1) It is resolved to approve the modification suggested for the course of signal analysis (15EC2002) as per the attachment
2) It is resolved to approve the modifications in the curriculum for the course of signal processing (15EC2206) as per the attachment

   These modifications are effective from 2015-16, 16-17 regulations and these changes are made keeping in view the continuity and the knowledge depth required by the student.

3) It is resolved to introduce modified course on Introduction to electronic engineering with emphasis on laboratory oriented practice and introduction to the basic concepts of electronics (Handout attached).
4) It is resolved to introduce a new core course in the area of internet of things based on the feedback from industry and academic peers.
   A Course "Internet of things and Sensor Instrumentation" is proposed for the 2017-18 batch. (Syllabus attached).

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