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Aditya Nagar, ADB Road, Surampalem - 533437, Near Kakinada, E.G.Dt., Ph:99498 76662

Program Name : M.Tech. in Embedded Systems

Syllabus Revision for the Academic Year 2019-20

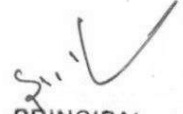| S.No	Semester	Course Code	Course Name	% of content revised for the existing year
1	I	192EM1T01	Embedded System Design	0
2	I	192EM1T02	Microcontrollers and Programmable Digital Signal Processors	100
3	I	192EM1E01	Digital Signal and Image Processing	100
4	I	192EM1E02	Parallel Processing	100
5	I	192EM1E03	VLSI signal processing	100
6	I	192EM1E04	Programming Languages forEmbedded Systems	100
7	I	192EM1E05	System Design with Embedded Linux	100
8	I	192EM1E06	CAD for Digital System	100
9	I	192HS1T01	Research methodology and IPR	100
10	I	192EM1L01	Embedded System Design Lab(using Embedded-C)	100
11	I	192EM1L02	Microcontrollers and Programmable Digital Signal Processors Lab	100
12	II	192EM2T03	Digital System Design	0
13	II	192EM2T04	Real Time Operating Systems	100
14	II	192EM2E07	Memory Architectures	100
15	II	192EM2E08	SoC Design	100
16	II	192EM2E09	Sensors & Actuators	0
17	II	192EM2E10	Communication Buses and Interfaces	100
18	II	192EM2E11	Network Security and Cryptography	60
19	II	192EM2E12	Physical design automation	100
20	II	192EM2L03	Real Time Operating Systems Lab	100
21	II	192EM2L04	Digital System Design Lab	100
22	II	192EM2P01	Mini Project with Seminar	100
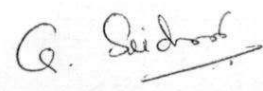
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S.No	Semester	Course Code	Course Name	% of content revised for the existing year
23	I/II	192MC1A01/1 92MC2A01	English for Research Paper Writing	100
24	I/II	192MC1A02/1 92MC2A02	Disaster Management	100
25	I/II	192MC1A03/1 92MC2A03	Sanskrit for Technical Knowledge	100
26	I/II	192MC1A04/1 92MC2A04	Value Education	100
27	I/II	192MC1A05/1 92MC2A05	Constitution of India	100
28	I/II	192MC1A06/1 92MC2A06	Pedagogy Studies	100
29	I/II	192MC1A07/1 92MC2A07	Stress Management by Yoga	100
30	I/II	192MC1A08/1 92MC2A08	Personality Development through Life Enlightenment Skills	100
31	I/II	192MC1A09/1 92MC2A09	Soft Skills	100
32	III	172EM3C01	Comprehensive Viva-Voce	0
33	III	172EM3R01	Seminar - I	0
34	III		Project Work Part - I	0
35	IV	172EM4R02	Seminar - II	0
36	IV	172EM4P01	Project Work Part- - II	0

Total number of courses in the academic year 2019-20	36
Number of courses having revision in syllabus content >/= 20% in the academic year 2019-20	28
Percentage of syllabus revision carried out in the academic year 2019-20 = (28/36)*100	77.70%

Program Coordinator

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Head of the Department
Head of the Department
Department of E.C.E.
Aditya Engineering College (A9)

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Department of Electronics and Communication Engineering

Date: 21-07-2019

Minutes of the IV meeting of BOS scheduled on 20-07-2019

The IV meeting of the BOS of Electronics and Communication Engineering Department was held on 20-07-2019 at 09.30 AM.

The Members discussed the agenda items and made the following resolutions.

Agenda 4.1: **Welcome address by Chairman**
Prof. G. Sridevi, Chairman of BOS, invited all the distinguished members of BOS to the first BOS meeting.

Agenda 4.2: **Ratification of minutes of the previous Board of Studies meeting**
The BOS members have ratified the points discussed in the previous Board of Studies meeting held on 10-11-2018.

Agenda 4.3: **Discussion and ratification of the Vision and Mission of the department and Program Educational Objectives (PEOs), Program Outcomes (POs) and Program Specific Outcomes (PSOs) of the Programs under the Department.**
Members of BOS ratified the Vision and Mission of the department, PEOs, POs and PSOs of the Programs under the Department.

Agenda 4.4: **Discussion on proposed AR19 B.Tech (ECE) program structure, I & II semesters syllabus and ratification of the same.**
After long discussions with the BOS members on the proposed program structure (AR19) based on the AICTE model curriculum and the following suggestions are made:

- Suggested to make Network Analysis by M E Van Valkenburg and Electric Circuits-Schaum's series by Mahmood Nahvi as Text Books of Network Analysis course in I semester.
- Suggested to prefer any Two Standard Books as Text Books in every course.
- Suggested to complete experiments in 1 hour session and evaluate the experiment through different assignments in remaining 2 hours session in Electronic Workshop course.
- Suggested to include Digital equipment like DSO in the Electronic Workshop course.
- Suggested to incorporate more computer based subjects in the curriculum.
- Suggested to internal evaluation should be in different ways

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- Suggested to include Internet of Things course in V or VI semester instead of III semester.
- Suggested to include the Communication related subjects like Computer Networks in the curriculum.
- Suggested to prepare semester wise courses in reverse order from VIII semester to I semester in the curriculum.
- Suggested to check whether the basic concepts like Coordinate Theory and Vector Calculus is included in the mathematics courses.
- Suggested to combine two courses with same track or specialization.
- Suggested to replace Biomedical Engineering with Biomedical Instrumentation in Open electives for other departments
- Suggested to make CAD tools as ECAD Tools in the open Elective III.
- Suggested to prepare core MOOCs courses list for the students to choose and alternate course for MOOCs as a choice.
- Suggested to record the presentation of final year project and evaluate accordingly.
- Suggested to arrange the MOOCs courses before VIII semester

Agenda 4.5: **Discussion on proposed AR19 M.Tech (VLSI) & AR19 M.Tech (ES) program structures, I & II semesters syllabus and ratification of the same.**
BOS members approved AR19 M.Tech (VLSI) & AR19 M.Tech (ES) program structures, I & II semesters syllabus and ratified the same.

Agenda4.6: **Discussion on the courses having focus on employability/entrepreneurship/skill development in B.Tech (ECE), M.Tech (VLSI Design) & M.Tech (ES) programs and ratification of the same.**
The members of BOS ratified the courses having focus on employability/entrepreneurship/skill development in the B.Tech (ECE), M.Tech (VLSI Design) &M.Tech (ES) programs.

Agenda 4.7: **Discussion on the new courses offered in the B.Tech (ECE), M.Tech (VLSI Design) & M.Tech (ES) programs and ratification of the same**
Members of BOS noted the new courses offered in the B.Tech (ECE), M.Tech (VLSI Design) & M.Tech (ES) programs and ratified the same.Percentage of new courses introduced in the academic year 2019-2020 for B.Tech (ECE) is 10.47 %, M.Tech (VLSI Design) is 72.22 % and M.Tech (ES) is 69.44 %. The list of new courses is enclosed as Annexure-I.

Agenda 4.8: **Discussion on the B.Tech (ECE),M.Tech (VLSI Design) &M.Tech(ES) Programs in which Choice Based Credit System (CBCS)/ElectiveCourse system is being implemented and ratification of the same.**
Members of BOS ratified the choice based credit systems (CBCS)/ Elective Course system that is being implemented pin B.Tech (ECE),M.Tech (VLSI Design) &M.Tech(ES) programs.

Agenda 4.9: Discussion on the percentage of syllabus revision done in the B.Tech (ECE), M.Tech (VLSI Design) & M.Tech (ES) programs and ratification of the same.

The syllabus revision was done in the B.Tech (ECE), M.Tech (VLSI Design) & M.Tech (ES) programs based on the stakeholders feedback on curriculum. The BOS members have Approved all the syllabus revisions in B.Tech (ECE), M.Tech (VLSI Design) & M.Tech (ES) programs. The percentage of courses revised in the academic year 2019-2020 for the B.Tech (ECE) is 34.5% M.Tech (VLSI Design) is 72.2% and M.Tech(ES) is 77.7%.The list of courses revised during the academic year 2019-2020 is enclosed as Annexure-II.

Agenda4.10: Discussion on the value-added courses offered for students and ratification of the same.

Members of BOS ratified the value- added courses identified for the students to be offered and suggested to include topics related to thrust areas.

Agenda 4.11: Analysis of Results

The BOS Chairperson presented the odd and even semesters pass percentage for the A.Y.2018-2019. The BOS members noted the same.

Agenda 4.12: Analysis of Students Feedback & Action Taken Report

BOS Chairperson expressed that the student feedback & action taken report process initiated at the end of each semester. The BOS members noted the same.

Agenda 4.13: Analysis of Stakeholder's Feedback on Curriculum.

The BOS Chairperson presented the analysis report of Stakeholder's feedback on curriculum. The BOS members noted the same and the Action Taken Report is enclosed as Annexure-III.

Agenda 4.15: Any other item/s with the approval of Chairperson.

Suggested to include Industrial oriented internship in III Year I Semester with a period of 2 to 3 weeks with 2 credits and ratified.

Agenda 4.16: Scheduling of next Board of Studies meeting.

The next BOS meeting is tentatively scheduled in the month of November 2019.

Agenda 4.17: Vote of Thanks

Prof. G. Sridevi, BOS Chairperson presented the Vote of thanks.

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BOS Chairperson
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Department of Electronics and Communication Engineering

Annexure-I

List of New Courses in the Academic Year 2019-2020

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (ECE)	I	191MC1A02	Constitution of India
2	B. Tech (ECE)	II	191PR2P01	Engineering Exploration Project
3	B. Tech (ECE)	V	171HS5T06	Employability Skills - III
4	B. Tech (ECE)	VI	171HS6T07	Employability Skills - IV
5	B. Tech (ECE)	II	191ES2L09	Electronics Engineering Workshop
6	B. Tech (ECE)	V	171EC5S01	MOOCs – I
7	B. Tech (ECE)	VI	171EC6E04	CPLD and FPGA Architectures
8	B. Tech (ECE)	VI	171EC6S02	MOOCs – II
9	B. Tech (ECE)	VII	R164104C	System Design through Verilog
10	M.Tech (VLSID)	I	192HS1T01	Research methodology and IPR
11	M.Tech (VLSID)	I	192MC1A01	English for Research Paper Writing
12	M.Tech (VLSID)	I	192MC1A02	Disaster Management
13	M.Tech (VLSID)	I	192MC1A03	Sanskrit for Technical Knowledge
14	M.Tech (VLSID)	I	192MC1A04	Value Education
15	M.Tech (VLSID)	I	192MC1A05	Constitution of India
16	M.Tech (VLSID)	I	192MC1A06	Pedagogy Studies
17	M.Tech (VLSID)	I	192MC1A07	Stress Management by Yoga
18	M.Tech (VLSID)	I	192MC1A08	Personality Development through Life Enlightenment Skills
19	M.Tech (VLSID)	I	192MC1A09	Soft Skills
20	M.Tech (VLSID)	I	192VD1E01	VLSI Technology
21	M.Tech (VLSID)	I	192VD1E02	Nano materials and Nano technology
22	M.Tech (VLSID)	I	192VD1E03	MEMS Technology
23	M.Tech (VLSID)	I	192VD1E04	Device Modelling
24	M.Tech (VLSID)	I	192VD1E05	Nano-Electronics
25	M.Tech (VLSID)	I	192VD1E06	Photonics
26	M.Tech (VLSID)	I	192VD1L01	CMOS Analog IC Design Lab
27	M.Tech (VLSID)	I	192VD1L02	CMOS Digital IC Design Lab
28	M.Tech (VLSID)	II	192VD2T03	Mixed Signal & RF IC Design

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29	M.Tech (VLSID)	II	192VD2T04	Physical Design Automation
30	M.Tech (VLSID)	II	192VD2E08	IoT & Its Applications
31	M.Tech (VLSID)	II	192VD2E10	Microcontrollers & programmable Digital Signal Processors
32	M.Tech (VLSID)	II	192EM2E11	Network Security & Cryptography
33	M.Tech (VLSID)	II	192VD2L03	Mixed Signal IC Design Lab
34	M.Tech (VLSID)	II	192VD2L04	Physical Design Automation Lab
35	M.Tech (VLSID)	II	192VD2P01	Mini Project with Seminar
36	M.Tech (ES)	I	192HS1T01	Research methodology and IPR
37	M.Tech (ES)	I	192MC1A01	English for Research Paper Writing
38	M.Tech (ES)	I	192MC1A02	Disaster Management
39	M.Tech (ES)	I	192MC1A03	Sanskrit for Technical Knowledge
40	M.Tech (ES)	I	192MC1A04	Value Education
41	M.Tech (ES)	I	192MC1A05	Constitution of India
42	M.Tech (ES)	I	192MC1A06	Pedagogy Studies
43	M.Tech (ES)	I	192MC1A07	Stress Management by Yoga
44	M.Tech (ES)	I	192MC1A08	Personality Development through Life Enlightenment Skills
45	M.Tech (ES)	I	192MC1A09	Soft Skills
46	M.Tech (ES)	I	192EM1T02	Microcontrollers and Programmable Digital Signal Processors
47	M.Tech (ES)	I	192EM1E01	Digital Signal and Image Processing
48	M.Tech (ES)	I	192EM1E02	Parallel Processing
49	M.Tech (ES)	I	192EM1E03	VLSI signal processing
50	M.Tech (ES)	I	192EM1E04	Programming Languages for Embedded Systems
51	M.Tech (ES)	I	192EM1E05	System Design with Embedded Linux
52	M.Tech (ES)	I	192EM1E06	CAD for Digital System
53	M.Tech (ES)	I	192EM1L01	Embedded System Design Lab(using Embedded-C)
54	M.Tech (ES)	I	192EM1L02	Microcontrollers and Programmable Digital Signal Processors Lab
55	M.Tech (ES)	II	192EM2E07	Memory Architectures
56	M.Tech (ES)	II	192EM2E08	SoC Design
57	M.Tech (ES)	II	192EM2E10	Communication Buses and Interfaces
58	M.Tech (ES)	II	192EM2E12	Physical Design Automation
59	M.Tech (ES)	II	192EM2L04	Digital System Design Lab
60	M.Tech (ES)	II	192EM2P01	Mini Project with Seminar

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BOS Chairperson

Head of the Department
Department of E.C.E.
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Department of Electronics and Communications Engineering

Annexure-II

List of Courses Revised in the Academic Year 2019-2020

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (ECE)	I	191HS1T01	Communicative English-I
2	B. Tech (ECE)	I	191BS1T01	Differential Equations and Linear Algebra
3	B. Tech (ECE)	I	191BS1T03	Applied Physics
4	B. Tech (ECE)	I	191ES1T01	Programming for Problem Solving Using C
5	B. Tech (ECE)	I	191HS1L01	Communicative English Lab-I
6	B. Tech (ECE)	I	191BS1L03	Applied Physics Lab
7	B. Tech (ECE)	I	191ES1L01	Programming for Problem Solving Using C Lab
8	B. Tech (ECE)	I	191ES1L02	Basic Engineering Workshop
9	B. Tech (ECE)	I	191MC1A01	Environmental Science
10	B. Tech (ECE)	II	191BS2T08	Transform Techniques
11	B. Tech (ECE)	II	191BS2T09	Engineering Chemistry
12	B. Tech (ECE)	II	91ES2T02	Engineering Graphics and Design
13	B. Tech (ECE)	II	191ES2T07	Basic Electrical Engineering
14	B. Tech (ECE)	II	191HS2L02	Communicative English Lab -II
15	B. Tech (ECE)	II	191BS2L04	Engineering Chemistry Lab
16	B. Tech (ECE)	V	171EC5E01	Computer Architecture and Organization
17	B. Tech (ECE)	VI	171EC6T14	VLSI Design
18	B. Tech (ECE)	VI	171EC6L08	VLSI lab
19	B. Tech (ECE)	VI	171EC6L08	Digital Communications Lab
20	B. Tech (ECE)	VII	R1641042	Digital Image Processing
21	B. Tech (ECE)	VII	R1641048	Digital Signal Processing Lab
22	M. Tech(ES)	II	192EM2E11	Network Security and Cryptography

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BOS Chairperson

Head of the Department
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Annexure III

Action Taken Report on Stakeholders Feedback

S. No	Agenda Item No.	Stakeholders Recommended	Action Taken
1	4.13	Student should know his/her primary rights, duties and responsibilities as a citizen. Usually this is neglected. It is suggested to include a course where students come to know their rights and duties.	Constitution of India is included in the I semester to facilitate the suggestion.
2	4.13	Focus on course related to entrepreneurship.	Suggestion will be taken forward to the concerned body and changes will be incorporated with proper approval.
3	4.13	The IT field's curriculum is ineffective for students	IT domain specific courses will be introduced more in number based on the concerned body approval
4	4.13	students would benefit if they are provided with practical exposure such as projects or internships in the early semesters itself so that they can be industry ready by the end of their graduation.	Engineering Exploration Project is introduced in the II semester. As a part of this activity, students can interact globally to carry out various projects and can have practical exposure.
5	4.13	There is a tremendous need for engineering and medical collaborative projects and innovations. Students can benefit if a relevant course is made a part of curriculum.	Biomedical Engineering is included in the VI semester, this course provides an insight to the afore said engineering and medical collaborative innovations which can meet the societal needs.
6	4.13	Few specific theory and related laboratory courses are not aligned in the same semester. It would be fruitful if they exist in the same semester.	Care will be taken in this aspect based on the recommendations given by the concerned body.
7	4.13	Include skill-oriented courses so that the students will meet the industry requirements.	Employability Skills courses are introduced in V and VI semesters to facilitate this requirement.

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8	4.13	Students should be encouraged to take part in value-added courses in as many numbers as possible so that they can interact globally	The suggestion will be taken forward to the advisory committee and action will be taken according to the committee recommendations.
9	4.13	Students should be motivated towards obtaining NPTEL courses which has numerous benefits	The suggestion will be taken forward to the advisory committee and action will be taken according to the committee recommendations and guidelines.
10	4.12	Apart from the existing labs, it would be helpful to the students if a lab is made a part of curriculum which includes hands on session such as soldering, designing and using the electronic components which are used in real time applications.	Electronics Engineering Workshop lab is included in the II semester and the experiments included in the lab are in such a way to meet the requirement as suggested by the students.
11	4.12	Signal processing and image processing courses are vast area where a student can carry research or find a career. Please incorporate course closely related to this domain. It will help the student to a great extent.	CPLD and FPGA Architectures and System Design through Verilog, are introduced in the VI and VII semesters respectively to have an exposure on cutting edge technologies related to signal processing and image processing.
12	4.12	Need more courses which bridges an exposure for the students to keep themselves updated towards trending technologies	Courses with cutting-edge technologies will be included as a part of curriculum with proper approval and recommendations.
13	4.13	Students after entering into the corporate world or in their respective careers, are not able to balance their professional and personal life because of the work stress, this has to be addressed in some or the other way.	It is well known fact and also suggested by our ancestors that YOGA helps an individual in many aspects, especially in stress management. A course Stress Management by Yoga is included in I and II semesters so as to inculcate in daily routine of the students'
14	4.13	Students need guidelines in moulding one's self to get adjusted in the corporate world or when being a part of society. Would be helpful if such guidance is a part of curriculum	Personality Development through Life Enlightenment, Value Education, Pedagogy Studies, Soft Skills facilitates the requirements suggested by the alumni.
15		Publications is a part of research and higher studies. Introducing courses closely related in this	English for Research Paper Writing, Pedagogy Studies Mini Project with Seminar

	4.13	aspect will help students in inculcating the research skills in them.	courses being a part of curriculum will help the students in improving their research skills.
16	4.13	Students need to be taught about human values, ethics to mould themselves as good citizens. It helps students if such aspects are included in the curriculum	Constitution of India, Sanskrit for Technical Knowledge, Value Education courses are introduced to fulfil the requirements suggested by parents.
17	4.12	Need more hands-on session exposure which facilitates students in practical learning of concepts	CMOS Analog IC Design Lab,CMOS Digital IC Design Lab,Mixed Signal IC Design Lab included in I and II semesters respectively which are VLSI domain specific facilitating students in learning practically.
18	4.13	Students after entering into the corporate world or in their respective careers, are not able to balance their professional and personal life because of the work stress, this has to be addressed in some or the other way.	It is well known fact and also suggested by our ancestors that YOGA helps an individual in many aspects, especially in stress management. A course Stress Management by Yoga is included in I and II semesters so as to inculcate in daily routine of the students'
19	4.13	Students need guidelines in moulding one's self to get adjusted in the corporate world or when being a part of society. Would be helpful if such guidance is a part of curriculum	Personality Development through Life Enlightenment, Value Education, Pedagogy Studies, Soft Skills facilitates the requirements suggested by the alumni.
20	4.13	Publications is a part of research and higher studies. Introducing courses closely related in this aspect will help students in inculcating the research skills in them.	English for Research Paper Writing, Pedagogy Studies Mini Project with Seminar courses being a part of curriculum will help the students in improving their research skills.
21	4.13	Students need to be taught about human values, ethics to mould themselves as good citizens. It helps students if such aspects are included in the curriculum	Constitution of India, Sanskrit for Technical Knowledge, Value Education courses are introduced to fulfil the requirements suggested by parents.
22	4.12	Need more hands-on session exposure which facilitates students in practical learning of concepts	CMOS Analog IC Design Lab,CMOS Digital IC Design Lab,Mixed Signal IC Design Lab included in I and II semesters respectively which

			are VLSI domain specific facilitating students in learning practically.

C. Seedroo

BOS Chairperson

Head of the Depa.
Department of E.L.
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