

GEETHANJALI COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ECE

Minutes of Meeting of Program Assessment Committee (PAC) held on 29/01/2022

Venue: Room No: 121

Duration: 10:00 am - 12.30 pm

Members present

Sl. No.	NAME	ROLE
1.	Prof. B. Hari Kumar	Dean, SE&CE
2.	Dr. S. Suryanarayana, HoD	Chairman, PAC
3.	Dr.P.Vijai Bhasker	Member
4.	Prof. K.Somashekara Rao	Member
5.	Dr B. Leela Prakash	Member
6.	Dr.P.Srihari	Member
7.	Prof. OVPR Siva Kumar	Member
8.	Dr. Sathya Srinivas	Member
9.	Mr. D. Venkata Rami Reddy	Member
10.	Mrs.A.Soujanya	Invited Member

Agenda:

1. Analysis of **Second semester results** of II B.Tech and III B.Tech ECE (AR18) and IV B.Tech ECE(AR16) **for the Academic Year 2020-21**
2. CO attainment for Second Semester courses
3. Analysis of PO attainment level of 2017-21 batch of students.
4. Identification of Courses contributed to low Program Outcome attainment and the corresponding course outcomes.
5. Course attainments in pre-requisite courses, if any, for courses in point 4.
6. Impact of Faculty Development Programs conducted
7. Opportunities provided to students for better assimilation of the concepts through / problem/project based learning through co-curricular activities / value added course(s) / guest lecture(s) / industrial visit(s)
8. Technical Seminars, Mini and major projects conducted
9. PO attainment through Co-curricular and Extra-curricular activities
10. Placements and Higher studies of 2017-21 Graduated students
11. Targets of POs, PSOs and Placements for the next batch of students

Resolutions/Discussions made:

Chairman, PAC started the meeting by welcoming all the members.

The following resolutions/Discussions were made in this meeting:

1. Second semester results of II B.Tech ECE, III B.Tech ECE and IV B.Tech ECE for the Academic year 2020-21 are reviewed.
 - i. Overall pass percentage in II B.Tech II sem ECE is 61.6%, which is increased by 10.66% compared to the previous batch of students. The overall pass percentage of the same batch in their II B.Tech I sem ECE was 60.84%.
 - ii. Low pass percentage in PTSP with 69.2%, Electromagnetic Theory and Transmission Lines with 81.37% and Linear Integrated Circuits with 85.17% among all the courses. But the percentage of pass increased compared to the previous batch of students in the above courses.
 - iii. Overall pass percentage in III B.Tech II sem ECE is 62.87%, which is decreased by 12.13% compared to the previous batch of students. The overall pass percentage of the same batch in their III B.Tech I sem ECE was 79.92%.
 - iv. Low Pass percentage in Computer Networks with 74.24% and Digital Signal Processing with 75.76% results in the decrement of the overall pass percentage.
 - v. Overall pass percentage in IV B.Tech II sem is 97.86%, which is increased by 9.4% compared to the previous batch of students. The overall pass percentage of the same batch in their IV B.Tech I sem ECE was 91.07%.
 - vi. Pass percentage in all the courses in IV B.Tech II sem is above 95%.
2. The committee reviewed the attainment of Course outcomes of all the courses offered in second semester of the academic year 2020-21. All the members participated in the discussion. CO attainment of the following courses was reviewed critically as these courses are leading to low attainment of corresponding POs.

Year and Sem	Course	Internal	External	Direct Attainment	Indirect Attainment	Overall Attainment
II-II	Probability Theory and Stochastic process	1.7	0	0.7	3	1.3
II-II	Electromagnetic Theory and Transmission Lines	3	0.2	1.32	3	1.7
III-II	Computer Networks	3	1.4	2	3	2.3
III-II	Digital Signal Processing	3	1	1.8	3	2.1

3. The committee analyzed the PO attainment levels of recently graduated 2016-20 batch. Overall attainment of all the POs and PSOs by taking direct and indirect attainment is given below:

POs/ PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Attainment	2.27	2.31	2.24	2.27	2.2	2.33	2.17	2.3	2.47	2.35	2.13	2.38	2.28	2.33
Target (70%)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1

The attainment levels of all the POs and PSOs are above the targets fixed based on the course contribution/mapping to the respective POs and PSOs.

4. The committee also identified the Courses contributed to low Program Outcome attainment and the corresponding course outcomes, in order to take the corrective measures to further improve the attainment levels of POs and PSOs for the coming batches. The details are as follows:

Year and Sem	Course	Internal	External	Direct Attainment	Indirect Attainment	Overall Attainment	COs with low attainment	POs and PSOs with low attainment
II-I	Electrical Circuits & Electrical Technology	0.8	1	0.9	2.4	1.3	CO 2,3,4 and 5	PO1,2,3,4,12 PSO1,2
II-I	Theory of Signals and Systems	1.3	2.1	1.8	2.4	2	CO 5,6,7 and 8	PO1,2,3, 12 PSO1
II-II	Pulse Digital and Switching Circuits	1.5	0.6	1	2.4	1.3	CO 1,2,3,4,5	PO1,2,3,4,5,12 PSO1,2
III-I	Linear and Digital ICs Applications	1.2	1.6	1.4	3	1.8	CO 2,4,5	PO1,2,3,12 PSO1,2
III-I	Microprocessors and Microcontrollers	0.9	2	1.56	2.6	1.8	CO 2,5,6	PO1,2,3,4,12 PSO1,2
III-I	Antennas and Wave Propagation	1.5	1	1.2	3	1.7	CO 1,3,4,5	PO1,2,3,12 PSO1
III-II	Optical Communications	1.9	1.5	1.66	3	1.995	CO3,4	PO1,2,3,4 PSO1
IV-I	Database Systems	3	0.6	1.56	2.8	1.87	CO 2,3,4,5	PO1,2,3,4,5,11, 12 PSO1,2

5. The committee looked into the Course attainments in courses and their corresponding pre-requisite courses. Attainment of the following courses is less because of the attainment level in their respective prerequisite courses also low.

Year and Sem	Advanced Course	Overall Attainment	Year and Sem	Prerequisite Course	Overall Attainment
II-I	Electrical Circuits & Electrical Technology	1.3	I-I	Engineering Physics	2.61
			I-I	Mathematics-I	2.57
II-I	Theory of Signals and Systems	2	I-I	Mathematics-I	2.57
			I-II	Mathematics-II	2.34
II-II	Pulse Digital and Switching Circuits	1.3	II-I	Electronic Devices and Circuits	2.2
			II-I	Electrical Circuits & Electrical Technology	1.3
			II-I	Switching Theory and Logic Design	2.2
III-I	Linear and Digital ICs Applications	1.8	II-I	Electronic Devices and Circuits	2.2
			II-I	Switching Theory and Logic Design	2.2
			II-II	Pulse Digital and Switching Circuits	1.3
			II-II	Electronic Circuit Analysis	2.4
III-I	Microprocessors and Microcontrollers	1.8	II-I	Switching Theory and Logic Design	2.2
III-I	Antennas and Wave Propagation	1.7	II-II	Electromagnetic Theory and Transmission Lines	2.4

From the above comparison of the course attainments in the courses given with their prerequisite courses, the committee opined that even though the student had strong foundation in prerequisite courses, it is required that students to have **good problem solving skills, analytical and logical skills and application of the known concepts**, so that the course attainment levels meet the target levels.

6. The committee reviewed the Faculty Development Programs conducted by the Department during second semester of Academic Year 2020-21.
- AICTE Training and Learning (ATAL) academy sponsored "Internet of Things (IoT)" organized during 1st December 2020 to 5th December 2020. Nine eminent speakers delivered their lectures on latest developments and applications of Internet of Things (IoT) in various sectors. A total of 200 faculty participated in the program, out of them 27 are internal faculty.
 - Digital Electronics group conducted a two day Faculty Development Program on experiments in Project Oriented Lab during 12th and 13th March 2021. Eight faculty of the Department participated in this in house FDP.
 - One day webinar on "Timing analysis of Digital Circuits" by Dr. Sakthivel Ramachandran, was organized by Analog Electronics Group on 31st March 2021. 28 Faculty of the Department were participated.
 - A Webinar is conducted by Signal Processing Group on "Digital Signal Processors- Hardware for Implementation of DSP algorithms" on 3rd April 2021. Dr. N. Balaji, Professor & Director, (IQAC)-JNTUK was explained the hardware design to implement DSP algorithms using DSP Processors. Total number of student and faculty participants in this one day program was 134.

7. The committee reviewed the opportunities provided to students for better assimilation of the concepts during Second Semester of Academic Year 2020-21.

S.No	Name of the event	Schedule of the event	Target Audience	Outcome of the event
1.	Architecture of IoT and its applications by Ms.Divya Nemuri, Senior IoT Engineer, Smart Bridge Educational Services Private Limited	7 th January 2021	Third Year students	Students are benefited from this session and learnt the applications of IoT in various fields to do their mini projects.
2.	ANALOG DESIGN FLOW by Mr.B.Chakravarthi, Senior Design Engineer, INTEL Bangalore	26 th March 2021	Third Year students	Third Year students attended the program. Students familiarized with the Layout design, Design Rule check, Post layout Simulation etc., after this program
3.	Guest Lecture on "Timing Analysis of Digital Circuits" by Dr.Sakthivel Ramachandran, Associate Professor, VIT University, Vellore	31 st March 2021	Third Year students	Third Year students attended the program. Students got to know how to simulate and synthesize the Digital Circuits with timing analysis
4.	Guest lecture on "Digital Signal Processors-Hardware for Implementation of DSP Algorithms", by Dr.N.Balaji, Professor and Director (IQAC)- JNTUK	3 rd April 2021	Third Year students	Third Year students attended the program and learnt the concepts which were useful in better assimilation of the concepts DSP Processors
5.	Guest Lecture on "Fundamentals of Digital Communication - Basics and Applications" by Dr.Amrita Mishra Faculty member, International Institute of Information Technology Bangalore	15 th April 2021	Second Year students	Second Year students benefited out of this lecture and performed well in their semester exam (Pass percentage: 93.92%)
6.	Two-day online	22nd and	Third Year	As most of the students are

	workshop on "Design and Implementation of Embedded Systems with Microcontrollers 8051/ARM7 using Virtual Tools" by The Centre of Excellence in IoT and Embedded Systems, ECE Department	23rd April 2021.	students	doing their Projects in IoT and Embedded Systems, the topic was very useful to the students.
7.	Various events under IEEE Student Branch and Student Branch Chapters, IETE Student Forum, ISTE Student Chapters and Srujanastra club	Second Semester	650 (approx)	Students benefited out of the Guest lectures, workshops, seminars, quiz contests conducted on the latest technologies
8.	Placement trainings	Second Semester	Third and Fourth year students	Students benefited by attending the Placement training and got the placement.
9.	Industrial Visit (Virtual)	Second Semester	II Year-100 III Year-100	Students visited 1. LED Chip Indus, Hyderabad on April 27, 2021 2. Indian Meteorological Department, Begumpet on April 26, 2021
10.	Students' Achievements - Recognitions	1. Ms.K.Dishira bearing Roll Number 16R11A04P6 and graduated in 2020, got admission to Indian Institute of Management, Ahmedabad. She secured a score of 92% in CAT. 2. Ms.A. Sai Sankeerthana bearing Roll Number 17R11A0451, has secured All India Rank 8524 with a Score of 350 in GATE 2021. 3. Mr. V. Uday Sai bearing Roll Number 16R11A0493, has secured All India Rank 439 with a Score of 744 in GATE. 4. Mr.V.Bharat Chary bearing Roll Number 16R11A0491, has secured All India Rank 6854 with a Score of 379 in GATE.		

8. The performance of the students for Technical Seminars, Mini Projects and Major Projects are evaluated from Rubrics developed for assessing the students. The committee reviewed the assessment and agrees to continue the same procedure for the subsequent batches.

9. The committee also discussed about the impact of co-curricular and extra-curricular activities on improving the learning levels of the students and also reviewed their contribution in attaining the POs and PSOs.

S.No	Name of the Activity (details on a separate sheet)	Year	No. of students attended	Total No. of students	% of students attended	level of attainment	No. of hours	POs												PSOs	
								PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
1	One Week Student Workshop on Basics of Digital Design	II B.Tech	108	280	38.57	3	42	2	2	2	2	2	0	2	2	2	2	0	2	2	2
2	Two-day Workshop on PCB Design and Fabrication	II B.Tech	79	280	28.21	3	12	0	2	2	2	2	2	0	0	2	0	2	2	2	2
	Bhaswara 2K19- Technical Events	II B.Tech	150	280	53.57	2	12	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	CRT Program/BEC Program	II B.Tech	280	280	100	2	72	0	3	0	0	0	0	0	0	0	3	0	3	0	0
5	Industrial Visits	II B.Tech	271	280	96.79	3	6	0	0	3	3	3	3	3	0	0	0	3	3	3	3
6	Career Opportunities and venues for higher Education	III B.Tech	180	280	64.29	2	12	0	0	0	0	0	0	0	0	0	2	0	2	0	0
7	A student development program on Arduino Programming and Node MCU for IoT	III B.Tech	100	280	35.71	3	120	0	3	3	3	3	3	0	0	3	0	3	3	3	3

8	Internship	III B.Tech	84	280	30.00	3	20	0	0	2	2	0	2	2	0	0	0	2	0	2	
9	Industrial Visits	III B.Tech	160	280	57.14	3	6	0	0	3	3	3	3	3	0	0	0	3	3	3	
10	Placemnt training by Six Phrase	III B.Tech and IV B.Tech	248	280	88.57	3	10 2	0	3	0	0	3	0	0	0	3	0	0	3	0	3
11	CRT Program by Mr.Crisna Chaitanya Reddy	III B.Tech and IV B.Tech	248	280	88.57	3	90	0	3	0	0	0	0	0	0	0	3	0	3	0	0
Total Number of Hours Spent towards Co-curricular and Extra Curricular activities from II Year to IV Year of 2017-21 Batch							494														
CV = Cumulative Value = No. of hours spent* PO attainment							108	1284	568	568	834	484	184	108	798	618	444	1384	528	874	
H = Number of Hours Spent towards Co-curricular and Extra Curricular activities - PO wise							54	450	218	218	300	178	86	54	288	230	156	494	198	320	
CV/H= Attainment level of each PO = Weighted average of the attainments of all co-curricular and extra- curricular activities considering the number of hours spent in each activity. Calculation of PO1 attainment is shown below							2.00	2.85	2.61	2.61	2.78	2.72	2.14	2.00	2.77	2.69	2.85	2.80	2.67	2.73	

10. The committee reviewed the placement and higher studies status of 2017-21 batch of students and satisfied with the performance of the students.

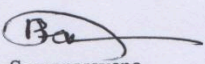
Number of students appeared	274
Number of students Graduated	259
Total No of Placements	333
No of Students placed	191
Minimum Salary (Rs Lakhs)	1.8
Maximum Salary (Rs Lakhs)	10
Average Salary (Rs Lakhs)	3.38
Median Salary (Rs Lakhs)	3.1
Number of students went for Higher studies	18

11. The committee discussed about the targets fixed for the attainment of the POs and PSOs for 2017-21 batch of students (target of 70%) and agreed to continue with the same targets (target of 70%) for 2018-22 batch of students also.

Action points:

1. After reviewing the results of Second semester of AY 2020-21, it is resolved to conduct more tutorials to solve the numerical problems by students, remedial classes in numerical problem/concept-oriented courses and slip tests in Second Year to improve the performance of the students in subsequent advanced courses in third and Fourth years related to the prerequisite courses.
2. The committee suggested the entire faculty to register for Swayam/NPTEL Courses in emerging areas and appear for exam to update their skill set.
3. With reference to item number 4 of Resolutions/Discussions made, the committee suggested training the students in various pre-requisite topics to improve their knowledge in engineering fundamentals and in turn to apply them in solving complex engineering problems. And also advised to give special focus on Lateral Entry students, as these students faced problems in the courses like Theory of Signals and Systems, Electronic Circuit Analysis, Electromagnetic Theory and Transmission Lines etc., where advanced mathematical concepts are involved. It is suggested to improve the methodology of teaching these courses for better attainment in the advanced courses related to these courses.
4. It is decided to conduct Value Added Courses to students in the latest technologies in different areas depending on the interest of the students to make them ready for industry requirements.
5. It is decided to continue to conduct career awareness programs, aptitude, communication skills development programs, placement training programs and Entrepreneur awareness programs by various sections/clubs/Professional Bodies.
6. It is also insisted to encourage students to participate in Hackathon and coding competitions in more number so that they get a much better opportunities in their career.

Chairman, PAC thanked all the members for attending the meeting and the meeting is concluded at 12:30 pm.


Dr. S. Suryanarayana
Program Coordinator