

Internal Quality Assurance Cell (IQAC) SGT University

Annual Report (Aug 2016- July 2017)
Department of Electronics & Communication Engineering

Edited by **Dr. Manish Sharma**
Department of ..ECE
(Brief write-up)

Department at a Glance (2016-17)

The Electronics and Communication Engineering Department at SGT University strives to impart latest knowledge and skills so as to kindle innovation & creativity among students, to establish a culture of research while promoting values, ethics and professionalism, leading to a progressive career in industry & academia globally. The Department has state of the art education aids, visual laboratories and competent faculty ensuring effective teaching learning process to meet the ever growing and changing industrial and business environment. The whole learning process is designed in a way so as to continuously challenge the young minds with ideas, to carry out innovative research through interaction with the research organizations & industry and to provide them avenues for recognition by participation in challenging platforms.

The Department was set up in **2015**. The Department has a rich tradition in research and teaching. The research interests of the faculty members of the department encompass the wide area of applied and fundamental aspects of Electronics and Communication Engineering including but not limited to Communication Systems, Microelectronics & VLSI, Digital Signal Processing, Wireless and Mobile communication, Antenna Design and RF & Microwave Engineering. A large number of Ph.D. scholars are currently engaged in cutting edge research in the Department.

The Department has state-of-the-art, well equipped laboratories with adequate facilities catering to the requirements of undergraduates, postgraduates and research scholars particularly in the area of High End Electronic Design, Microcontrollers, Microprocessors, Embedded System Design, VLSI Design, Antenna Design, Microwave, Advanced Communication Systems, Simulation and Digital Signal Processing. In addition to the well-equipped curriculum related laboratories, the Department has strong association with the Research Clusters and various Centers of Excellence in the University.

Name of the Department: **Electronics & Communication Engineering**

Year of establishment: **2015**

1. List of Faculty with designations (Table..)

Sl. No	Name of Faculty	Designation
1	Dr. Manish Sharma	Associate Professor
2	Dr. Raman Kapoor	Assistant Professor
3	Mr. Naresh Kumar	Assistant Professor
4	Mr. Rambir Joon	Assistant Professor
5	Mr. Shakir	Assistant Professor
6	Mr. Devender Pal Singh	Assistant Professor
7	Ms. Malini	Assistant Professor
8	Ms. Jyoti Ahlawat	Assistant Professor

2. Names of programmes offered (UG, PG, M.Phil., Ph.D., M.Sc., etc.)

UG : B.Tech (Electronics & Communication Engineering)- 4 years

PG: M.Tech: (Electronics & Communication)- 2 years

Ph.D: Electronics & Communication

3. Education:**a). Hours of teaching in each subject****Under graduation:** 4 Lectures/week (Total 35 - 40 hour for theory classes is allotted for each subject in a semester)**Post graduation:** 4 Lectures/week (Total 35-40 hour of theory classes is allotted for each subject in a semester)**Other trainings:** 1 week industrial exposure in 3rd, 5th and 7th semester30 days training in 4th and 6th semester, 6 months training in 8th semester**b). Continued Education (workshop, seminar, symposium, conferences)**

i) Summary of the above, department wise (Total No.)

Event	Attended	Organized	Paper / poster presented	Guest lectures delivered	Keynotes delivered
Conference national	-	-	10	-	-
Conference international	-	-	4	-	-
Conventions	-	-	-	-	-
Symposium	-	-	-	-	-
Workshops	12	5	-	-	-
Others	20	-	-	-	-
Total	32	5	14	-	-

ii). Details of above, Faculty member wise...

1) Dr. Manish Sharma

Event	Attended	Organized	Paper / poster presented	Guest lectures delivered	Keynotes delivered
Conference national	-	-	5	-	-
Conference international	-	-	2	-	-
Conventions	-	-	-	-	-
Symposium	-	-	-	-	-
Workshops	6	-	-	-	-
Others	6	-	-	-	-
Total	12	-	7	-	-

2) Dr. Raman Kapoor

Event	Attended	Organized	Paper / poster presented	Guest lectures delivered	Keynotes delivered
Conference national	-	-	1	-	-
Conference international	-	-	2	-	-
Conventions	-	-	-	-	-
Symposium	-	-	-	-	-
Workshops	3	-	-	-	-
Others	-	-	-	-	-
Total	3	-	3	-	-

3) Mr. Naresh Kumar

Event	Attended	Organized	Paper / poster presented	Guest lectures delivered	Keynotes delivered
Conference national	-	-	4	-	-
Conference international	-	-	-	-	-
Conventions	-	-	-	-	-
Symposium	-	-	-	-	-
Workshops	-	-	-	-	-
Others	8	-	-	-	-
Total	8	-	4	-	-

4) Mr. Shakir

Event	Attended	Organized	Paper / poster presented	Guest lectures delivered	Keynotes delivered
Conference national	-	-	-	-	-
Conference international	-	-	-	-	-
Conventions	-	-	-	-	-
Symposium	-	-	-	-	-
Workshops	-	5	-	-	-
Others	5	-	-	-	-
Total	5	5	-	-	-

5) Mr. Rambeer Joon

Event	Attended	Organized	Paper / poster presented	Guest lectures delivered	Keynotes delivered
Conference national	-	-	-	-	-
Conference international	-	-	-	-	-
Conventions	-	-	-	-	-
Symposium	-	-	-	-	-
Workshops	-	5	-	-	-
Others	-	-	-	-	-
Total	-	5	-	-	-

6) Mr. Devender pal Singh

Event	Attended	Organized	Paper / poster presented	Guest lectures delivered	Keynotes delivered
Conference national	-	-	-	-	-
Conference international	-	-	-	-	-
Conventions	-	-	-	-	-
Symposium	-	-	-	-	-
Workshops	3	-	-	-	-
Others	1	-	-	-	-
Total	4	-	-	-	-

4. Publications:

i) Journal articles

a). Summary of publication department wise (Total No.):

S. no.	Type	Total no. Of Articles	National	International	others
1	Indexed	20	4	16	-
2	Non indexed	24	-	24	-
3	Peer reviewed	-	-	-	-
4	Non peer reviewed	-	-	-	-

b) Details of the above (to be furnished faculty member wise).

1) Dr Manish Sharma

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR/ SNIP	h-index	Impact factor
1	M. Sharma , Y. K. Awasthi, and H. Singh, "Planar High Rejection Dual Band-Notch UWB Antenna with X & Ku-Bands Wireless Applications,"	International	-	-	-	13	0.52
2	M. Sharma , Y.K. Awasthi, H. Singh, R. Kumar, and S. Kumari, "Design of Compact Flower Shape Dual Notched-Band Monopole Antenna for Extended UWB Wireless Applications,"	International	-	-	-	21	0.379
3	Y K Awasthi, H Singh, M Sharma , S Kumari and A K Verma "CAD based Circuits Model of Microstrip line for THz Interconnect Technology,"	International	-	-	-	-	-
4	M. Sharma , H. Singh, and Y.K. Awasthi, "Design of Compact Planar Triple Band-Notch Monopole Antenna for Ultra-Wideband Applications,"	International	-	-	-	37	0.458
5	M. Sharma , H. Singh, and Y.K. Awasthi, "Compact UWB antenna with High Rejection Triple Band-Notch Characteristics for Wireless Applications,"	International	-	-	-	37	0.458
6	M. Sharma , Y. K. Awasthi, and H. Singh, "Design of CPW-fed High Rejection Triple Band-Notch UWB Antenna on Silicon with Diverse Wireless Applications	International	-	-	-	20	1.359
7	M. Sharma , Y.K. Awasthi, H. Singh, R. Kumar, and S. Kumari, "Compact Printed High Rejection Triple Band-Notch UWB antenna with multiple wireless applications,"	International	-	-	-	-	0.689
8	M. Sharma , Y.K. Awasthi, and H. Singh, "Compact Planar UWB Monopole Antenna with Dual Band-Notch Characteristics	International	-	-	-	07	0.60

9	R. Kumar, Y.K. Awasthi, H. Singh, M. Sharma , and S. Kumari, "Vase Shape UWB Antenna,"	International	-	-		21	1.253
10	Y.K. Awasthi, M. Sharma , H. Singh, R. Kumar, and S. Kumari, "CPW-Fed Dual Notched-Band UWB Antenna on Silicon Substrate	National	-	-	-	-	-
11	Y.K. Awasthi, M. Sharma , H. Singh, R. Kumar, and S. Kumari, "CPW-Fed Micro-Size Phase Shifters on Silicon Substrate,"	National	-	-	-	-	-
12	M. Sharma , Y.K. Awasthi, H. Singh, R. Kumar, and S. Kumari, "Single Band Notched Ultra-Wideband Monopole Antenna,"	National	-	-	-	-	-
13	M. Sharma , Y.K. Awasthi, H. Singh, R. Kumar, and S. Kumari, "Ultra-Wideband Dual Notch Antenna,"	National	-	-	-	-	-

2) Dr Raman Kapoor

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR/ SNIP	h-index	Impact factor
1	Ashutosh Kumar, Raman Kapoor , Manjari Garg, Vikram Kumar, Rajendra Singh, Direct Evidence of Barrier Inhomogeneities using Nanoscopic Electrical Characterizations	International	-	-	1.1	159	3.440
2	C. S. Pathak, R. Kapoor , J. P. Singh and R. Singh, Investigation of the effect of organic solvents on the electrical characteristics of PEDOT:PSS/p-Si heterojunction diodes	International	-	-	0.64	162	1.879
3	Ashutosh Kumar, M. Heilmann, Michael Latzel, Raman Kapoor , Intu Sharma, M. Göbel, Silke H. Christiansen, Vikram Kumar, and Rajendra Singh, Barrier inhomogeneities limited current and 1/f noise transport in GaN based nanoscale Schottky barrier diodes	International	-	-	1.62	104	4.259
4	P. Goel, S. Kumar, R. Kapoor and J. P. Singh, Mechanical strain induced wetting transitions between anisotropic and isotropic on	International			0.95	138	3.387

	polydiemthylsiloxane (PDMS) films patterned by optical discs		-	-			
5	S. K. Swami, N. Chaturvedi, A. Kumar, R. Kapoor , V. Dutta, J. Frey, T. Moehl, M. Gratzel, S. Mathew, M. K. Nazeeruddin, Investigation of electrodeposited cobalt sulphide counter electrodes and their application in next-generation dye sensitized solar cells featuring organic dyes and cobalt-based redox electrolytes	International	-	-	1.94	237	6.395
6	R. Kapoor , E. Escobedo-Cousin, S. H. Olsen and S. J. Bull, Nanoscale Characterization of Gate Leakage in Strained High-Mobility Devices	International	-	-	1.02	152	2.605
7	R. Kapoor , E. Escobedo-Cousin, S. H. Olsen and S. J. Bull, Characterising Gate Dielectrics in High Mobility Devices using Novel Nanoscale Techniques	International	-	-	0.47	72	1.371
8	S.H. Olsen, R. Kapoor and S.J. Bull, (Invited) Scanning Probe Analysis of Dielectrics on High Mobility Substrates	International	-	-	0.23	38	0.457

3) Mr. Naresh

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR/ SNIP	h-index	Impact factor
1	Face Recognition Techniques With Performance And Comparison”	International	-	-	-	-	-
2	Design & Performance Analysis of 16 Bit RAM Using QCA Technology	International	-	-	-	-	-
3	Realization of Flip Flops Using LabVIEW and MATLAB”	International	-	-	-	-	-
4	Realization of Digital Circuits Systems Using Embedded Function on MATLAB”	International	-	-	-	-	-

5	Development of an Embedded System Based Touch Screen Solution	International	-	-	-	-	-
6	“A5/1 Algorithm Based on Quantum-Dot Cellular Automata (QCA) Technology”	International	-	-	-	-	-

4) Mr. Shakir

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR/ SNIP	h-index	Impact factor
1	“MICROPROCESSOR BASED IMPROVED DIGITAL PROTECTION OF TRANSMISSION LINE	International	-	-	-	-	3.024
2	WIND MILL MOBILE CHARGER FOR TWO WHEELER/FOUR WHEELER	International	-	-	-	-	3.024
3	UTILIZATION OF WIND MILL MOBILE CHARGER FOR AUTOMOBILES	International	-	-	-	-	3.83
4	“MODELING AND SIMULATION OF DYNAMIC VOLTAGE RESTORER (DVR) FOR VOLTAGE SAGS/SWELLS MITIGATION”	International	-	-	-	-	3.83

5) Ms. Malini Soman

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR/ SNIP	h-index	Impact factor
1	Malini Soman , Amala Rajan,” A Survey on MAC Protocols for Wireless Sensor Networks and Cognitive Radio Sensor networks Design	International	-	-	-	-	-

2	Malini Soman , Amala Rajan” A Multi-Channel Energy Efficient Mac Protocol With Cooperative Spectrum Sensing In Cognitive Radio Networks	International	-	-	-	-	-
3	Malini Soman , Aparna A. R,” Energy-Efficient Medium Access Control (MAC) Protocols for Wireless Body Area Networks: A Survey”	International	-	-	-	-	-
4	Malini Soman , Amala Rajan,” An Empirical Study of MAC Protocols for Wireless Sensor Networks and Design of Cognitive Radio Sensor networks”	International	-	-	-	-	-
5	Malini Soman , Aparna A. R,” Wireless Body Area Networks Medium Access Control (MAC): IEEE 802.15.4 and IEEE 802.15.6”	International	-	-	-	-	-
6	Malini Soman , Sara Baby” Rendezvous Based Techniques for Energy Conservation in Wireless Sensor Networks – A Survey”	International	-	-	-	-	-

6) Mr. Rambeer Joon

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR / SNIP	h-index	Impact factor
1	Analysis of Wimax Handover.	International	-	-	-	-	-
2	Simulation and comparison of CSFQ, RED & FRED Queuing Techniques	International	-	-	-	-	-
3	Simulation and Comparison of AODV, DSR and AOMDV Routing protocol in MANETs	International	-	-	-	-	-

7) Ms. Jyoti

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR/ SNIP	h-index	Impact factor
1	Ms. Jyoti Ahlawat “automatic food intake detection for swallow sounds”	International	-	-	-	-	3.785
2	Jyoti Ahlawat, Kiritika Bawa, Kavita Choudhary, “Digital & Virtual Era : Digital citizenship”	International	-	-	-	-	-
3	Priyanka Bhardwaj, Jyoti Ahlawat “Design and analysis of Low-Power Multiplier using Fixed-width Replica Redundancy Block”	International	-	-	-	-	-

8) Mr. Devender pal Singh

S. no.	Article in Vancouver style	National/ international	Database	Citation index Range/ average	SJR/ SNIP	h-index	Impact factor
1	Delay Analysis in Carbon Nanotube bundle interconnects for VLSI Design”	International	-	-	-	-	1.45

ii) Abstracts published in conference proceedings. (faculty member wise)-NIL

iii) Books with ISBN with details (faculty member wise)

- Mr. Naresh Kumar

Naresh Kumar, Sunita Rani, “**Memory Design Using Quantum Dot Cellular Automata (QCA) Technology**”,

ISBN-13:978-3-330-08648-7, ISBN-10: 3330086483

5. Details of patents and income generated-NIL

6. Awards and Honours-NIL

Awards / recognitions received at the national and international level by (in Table. format...)

- Faculty
- Others
- Doctoral / post doctoral fellows
- Students

7. Consultancy and Participation as expert , income generated, (brief note on each)-NIL

8. Research

i). Details of the Funded projects department wise:NIL

Sno.	Name of the faculty/ department	Name of PI	Funding agency	Indian agency / WHO / International / SGT University	Project title	Grants received	Completed/ ongoing/ new project submitted
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ii) Details of other non funded / self funded projects: department wise (list only)

Sr. No..	List of self-funded Projects	Project Coordinator
1	Solar Charger for Electric Rikshaw	Mr. Naresh Kumar
2	Hardware implementation of Dynamic Voltage Restorer	Mr. Shakir
3	Wireless Integrity Module	Ms. Malini
4	Smart control of in-house applications	Mr. Rambeer
5	Voice based wheel chair	Ms. Jyoti

iii) Student projects: NIL

Sno.	Name of the student	Name of Guide	Course PhD, MD, MDS, MSc, JRF, SRF	Funded/ self funded	Indian agency / WHO / International / SGT University	Project title	Grants received	Completed/ ongoing
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- percentage of students who have done in-house projects including inter-departmental projects
- percentage of students doing projects in collaboration with other universities /industry / institute

9. Patient Care, please provide detail in enumerative figures during the year of consideration. (write NA if not applicable)

Facilities available	N/A
Operations / procedures	N/A
ICU details	N/A
Emergency Duties	N/A
OPD clinics	N/A

10. Other Significant Events -

11. Courses in collaboration with other universities, industries, foreign institutions, etc. – MOOC Courses

12. Details of programmes discontinued, if any, with reasons : NIL

13. Examination System: Annual/Semester/Trimester/weekly :

S.N	Mode	Marks	Converted marks
Internal Assessment			
1	Saturday assessment (3 assessment for each subject)	50 marks each i.e 150 marks for each subject	150/10 = 15 marks
2	Mid Sessional exam (CAT-I)	50 marks	50/5 = 10 marks
3	Attendance	5	5 marks
4	GD/ Seminar/ SIS/ Assignment	15	10 marks
Total marks			40 marks
External Assessment			
1	End term Examination	60	60
Total			60 marks

Total 100 marks examination will be conducted including internal and external assessment
Final exam will be conducted as per curriculum at the end of semester in which question paper need to be designed in following pattern:-

1. Part A total question 23
2. Part B total question 50
3. Total 73 question need to be prepared for 180 min. (3hr)

Internal Assessment:

Every Saturday will be engaged as assessment day of every subject under SGTU which involve the following points:-

1. MCQ's related to technical Subject (40%)
2. MCQ's/ Short Answer type questions related to reasoning and General Aptitude (30%)
3. Long Answer questions related Technical subjects (30%)

14. Choice Based Credit System –Give brief note

- a) The CBCS provides choice for students to select from the prescribed courses (core, elective or minor or soft skill courses).
- b) The course structure of each programme consists of 10 Professional Electives and 4 open electives.
- c) Each professional elective gives a choice of three to four courses out of which the student has to select one course.
- d) Each open elective also is given a choice of three to four courses, which does not necessarily have any prerequisites and offered to a student of any programme.
- e) A student is introduced to "Choice Based Credit System (CBCS)" for which he/she has to register for the courses as per the following rules:
 - i. There is no choice for I and II year courses.
 - ii. Courses once registered are final and CANNOT be changed / interchanged or alternate choices will not be considered. However, if the subject/course that has already been listed for registration (by the HOD) in a semester could not be offered due to any unforeseen or unexpected reasons, then the student shall be allowed to have an alternate choice – either for a new subject (subject to offering of such a subject), or for another existing subject (subject to availability of seats), which may be considered. Such alternate arrangements will be made by the Head of Department, with due notification and time-framed schedule, within the FIRST WEEK from the commencement of class work for that semester.
 - iii. A student has a choice of dropping a course or registering an additional course (from the

list of open electives) with a minimum of 21 and a maximum of 29 credits in each semester, but the credits allotted for each semester is considered for promotion. However, dropping a course may be permitted only after prior approval from the faculty advisor and HOD and also within 15 days from the beginning of the current semester

15. Participation of the department in the courses offered by other departments, courses in collaboration with other universities, industries, foreign institutions, etc.-NIL

16. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad (e.g. Commonwealth fellowships, WHO fellowships, UNESCO fellowships etc)-NIL

17. Faculty serving in

- a) National committees-NIL
- b) International committees-NIL
- c) Editorial Boards-NIL
- d) any other (please specify)-NIL

18. Faculty recharging strategies (Capacity Building programmes) (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs). (give details)
NITTTR (Short Term Course), NPTEL, IIT Spoken Tutorial, QIP

19. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance (updated till date)

Name	Qualification	Designation	Specialization	No. of	No. Of thesis/ dissertations guided till now (Ph.D. / M.Phil./ PG/ UG/Students)
				Years of Experience	
Dr. Manish	Ph D	Associate Professor	Antenna and Microwave Design	15	-
Dr. Raman Kapoor	Ph D	Assistant Professor	Semiconductor and Circuits	3	-
Mr. Naresh Kumar	M Tech	Assistant Professor	Microcontroller and Embedded System	9	-
Mr. Rambeer Joon	M Tech	Assistant Professor	Wimax and Antenna	8	-
Mr. Shakir	M Tech (PhD pursuing)	Assistant Professor	Electrical Power System Protection	9	-
Ms. Jyoti	M Tech	Assistant Professor	Digital Signal Processor	2	-
Ms. Malini	M Tech, (PhD pursuing)	Assistant Professor	Wireless body area network	8	-
Mr. Devender pal Singh	M Tech	Assistant Professor	VLSI Design	3	-

20. List of senior Visiting Fellows, adjunct faculty, emeritus professors: NIL

21. Programme-wise Student Teacher Ratio: 4

22. Number of academic support staff (technical) and administrative staff: (in Table form)

Technical Staff	Administrative Staff
2	01

23. Establishment of Research facility / centre (during the year of consideration)

- For future consideration

24. Student profile programme-wise (No. only):

Name of the Programme	Applications Received wherever known	Selected		Pass percentage	
		Male	Female	Male	Female
B Tech	57	11	2	70%	100%
M Tech	10	1	1	0%	100%

25. Diversity of Students (No. only):

Name of the Programme	% of Students from the Same University	% of students from other Universities within the State	% of students From Universities outside the State	% of students from other countries

26. Student progression (No. Only)

Student progression	Percentage against enrolled
UG to PG	NIL
PG to M.Phil.	NIL
PG to Ph.D.	NIL
Ph.D. to Post-Doctoral	NIL
Employed	NIL
<input type="checkbox"/> Campus selection	-
<input type="checkbox"/> Other than campus recruitment	-
Entrepreneurs	-

27. Diversity of staff (No. Only):

Percentage of faculty who are graduates of the same university 0%	
From other universities within the State	$(3/8) \times 100 = 37.5\%$
from universities from other States	$(4/8) \times 100 = 50\%$
From universities outside the country	$(1/8) \times 100 = 12.5\%$

28. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. : 02

29. Present details of departmental infrastructural facilities regarding

- a) Library (no. of Books and Journals):
No. of books- ECE-2018, Electrical-573
No. of journals-11
- b) Internet facilities for staff and students
- c) Total number of class rooms-04
- d) Class rooms with ICT facility-04
- e) Students' laboratories -21
- f) Research laboratories -01

30. List of doctoral, post-doctoral students and Research Associates -01

- a) from the host institution/university-01
- b) from other institutions/universities -NIL

31. Number of post graduate students getting financial assistance from the university-NIL

32. FEEDBACK System (Brief note)

Feedback system in University is categorized as follows

1. Centralized Feedback system (5 Point Analysis)

Centralized Feedback System is evaluated on 5 point analysis

Scale	Excellent	Very Good	Good	Satisfactory	Unsatisfactory
Grade	A	B	C	D	E
Score	5.0	4.0	3.0	2.0	1.0

Different parameters are taken into consideration while calculating feedback which includes

1. Quality of course content
2. Practical or applied content of teaching
3. Course coverage and delivery
4. Knowledge base of the teachers
5. Teacher's ability to co-relate the subject with other disciplines
6. Communication skills of the teacher
7. Sincerity and commitment level of teachers.
8. Teacher's accessibility outside the class
9. Teacher's testing methods to evaluate students
10. Learning outcomes
11. Encouragement by teachers for class participation
12. Fairness of internal assessment
13. Student's knowledge about course details, scheme of examinations and ordinances
14. Adequacy and quality of relevant labs
15. Library support
16. Support from administrative staff
17. Co-curricular and extra-curricular activities
18. Student-teacher relationship
19. Handling of student's grievances and
20. Career counselling and placement facilities

2. Mentor-Mentee System

Mentor-Mentee system is maintained right from 1st Semester – 8th Semester. Under the interaction section of Mentor's Diary, students provide feedback which is recorded for every 15 days.

3. Suggestion Box

There is provision of suggestion box on Ground Floor where students are welcomed to provide suggestions/feedback

33. Student enrichment programmes [give details of (special lectures / workshops / seminar) involving external experts.]

34. Changes in Teaching Guidelines. (List the teaching methods adopted by the faculty for different programmes.)

S.N	Teaching Methodology adopted
1	Project Based Learning
2	Problem Based Learning
3	Student Interactive session
4	Student Seminar
5	Case Study
6	Teacher's Seminar
7	Focus Group Discussion
8	Spot Group Discussion
9	Tutorials
10	Assignments

35. Changes adopted in monitoring learning outcomes

- Quizzes
- Assignments
- Seminar by each student

36. Extension activities.

37. “Beyond syllabus scholarly activities” of the department

- Industrial visits
- Workshops
- Guest lectures

38. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths

- Well qualified and experienced faculties
- Research oriented mindset
- Commitment to continuous learning
- High Quality Academic Program.
- Well Developed Faculty Rooms, Class Rooms and Laboratories

Weakness

- Relatively lower strength of students but we are strongly motivated to improve on it
- Less non teaching staff
- Lack of research facility in the campus.
- Weak Global Connections.
- No faculty exchange or student exchange programmes.

Opportunities

- Inter-departmental activities
- Setting up of various Centres of Excellence
- More number of Projects can be undertaken.
- More Participation of Students in Research Activities.
- Students can be Trained for the competitive exams.

Challenges

- Keeping continuously updated with emerging trends and technologies
- Maintaining the high levels of motivation of students
- To motivate students towards competitive exams
- Running of New Courses
- Obtaining Financial Aid from the government for Projects.

39. Best Practices of the department

- Punctuality of teaching and non-teaching staff
- Active participation in research and faculty development activities
- Regularly organized workshops and guest lectures
- Implementation of innovative teaching methodologies such as project based learning, student interactive sessions, seminars, group discussions, etc.

40. Future plans for the department

- Department is looking forward to start research level activities by proposing following research labs:
 1. VLSI
 2. Device modelling
- Requirements such as tanner tool, Silvaco software have already been placed.
- Faculty members with M.Tech qualification have been asked to upgrade themselves by pursuing Ph. D