Department of Electronics and Communication Engineering

Jaypee University of Information Technology, Waknaghat

Vision

To become a centre of excellence and to produce high quality, self motivated, creative and ethical engineers and technologists, contributing effectively to universal science and contemporary education.

Mission

M1. To impart high quality electronics and communication engineering education and professional ethics to students.

M2. To adopt the best pedagogical methods in order to maximize knowledge transfer.

M3. To have adequate mechanisms to enhance understanding of implementation of theoretical concepts in practical scenarios.

M4. To carry out high quality research leading to the creation of knowledge and of intellectual property.

M5. To provide the best facility, infrastructure, and environment to its students, researchers and faculty members, creating an ambience conducive for excellence in technical education and research.

Vision and Mission are published and disseminated

- **Website, http://www.juit.ac.in/department-of-electronics-and-communication**

- **Brochure**
- **Students' Orientation Programme.**

History

Programme	Description	Number of Seats	Year
B.Tech in Electronics & Communication Engineering.	Started with	**120**	**2002**
Accredited (for 5 years) in 2009			
M.Tech in Electronics & Communication Engineering.	Started with	**20**	**2005**
Ph.D.			**2003**

Bachelor of Technology
in
Electronics and Communication Engineering

Programme Educational Objectives (PEOs)

PEO-1

To acquire a strong background in basic science and mathematics and ability to use these tools in electronics and communication engineering.

PEO-2

To develop the ability to demonstrate technical competence in the fields of electronics and communication engineering and develop solutions to the problems in various areas of electronics and communication engineering.

PEO-3

To attain professional excellence through life-long learning.

PEO-4

To attain the qualities of professional leadership to deliver effectively in a multi-disciplinary team and domains.

PEO-5

To produce graduates who ensure ethical and moral behaviour.

PEO disseminated through

University's website

http://www.juit.ac.in/department-of-electronics-and-communication

Prospectus

Stakeholders of the Programme

Students

Faculty

Staff Members

Parents

Alumni

Industry

Foundation members

Process for establishing PEOs

Inputs from the students

Inputs from the faculty

Inputs from Alumni

Department meeting , with active participation of faculty.

PEO s are documented and put forward to Dean and VC for discussion.

Once finalized, sent for approval of BOS and Academic Council .
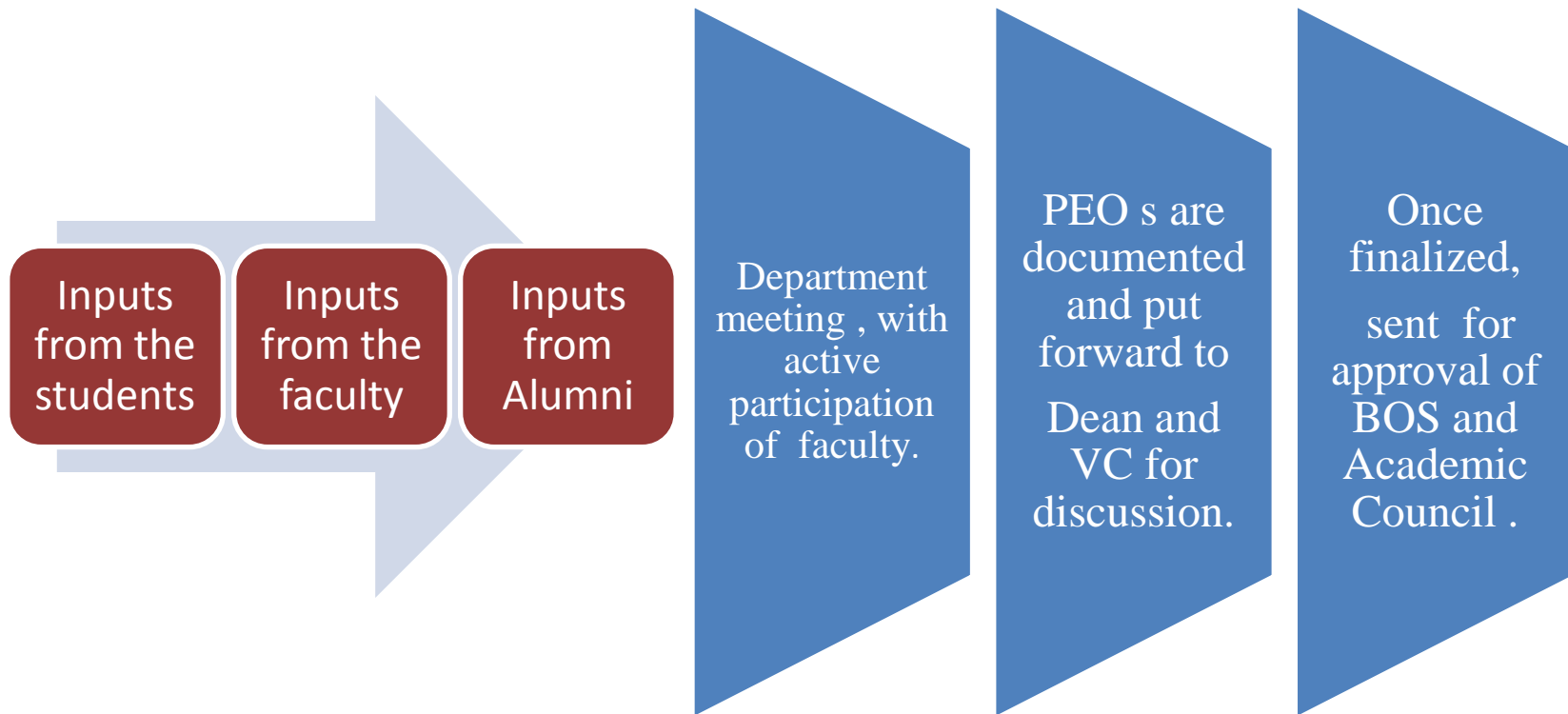
Keeping in pace with the changes occurring globally in the field of Engineering and Technology
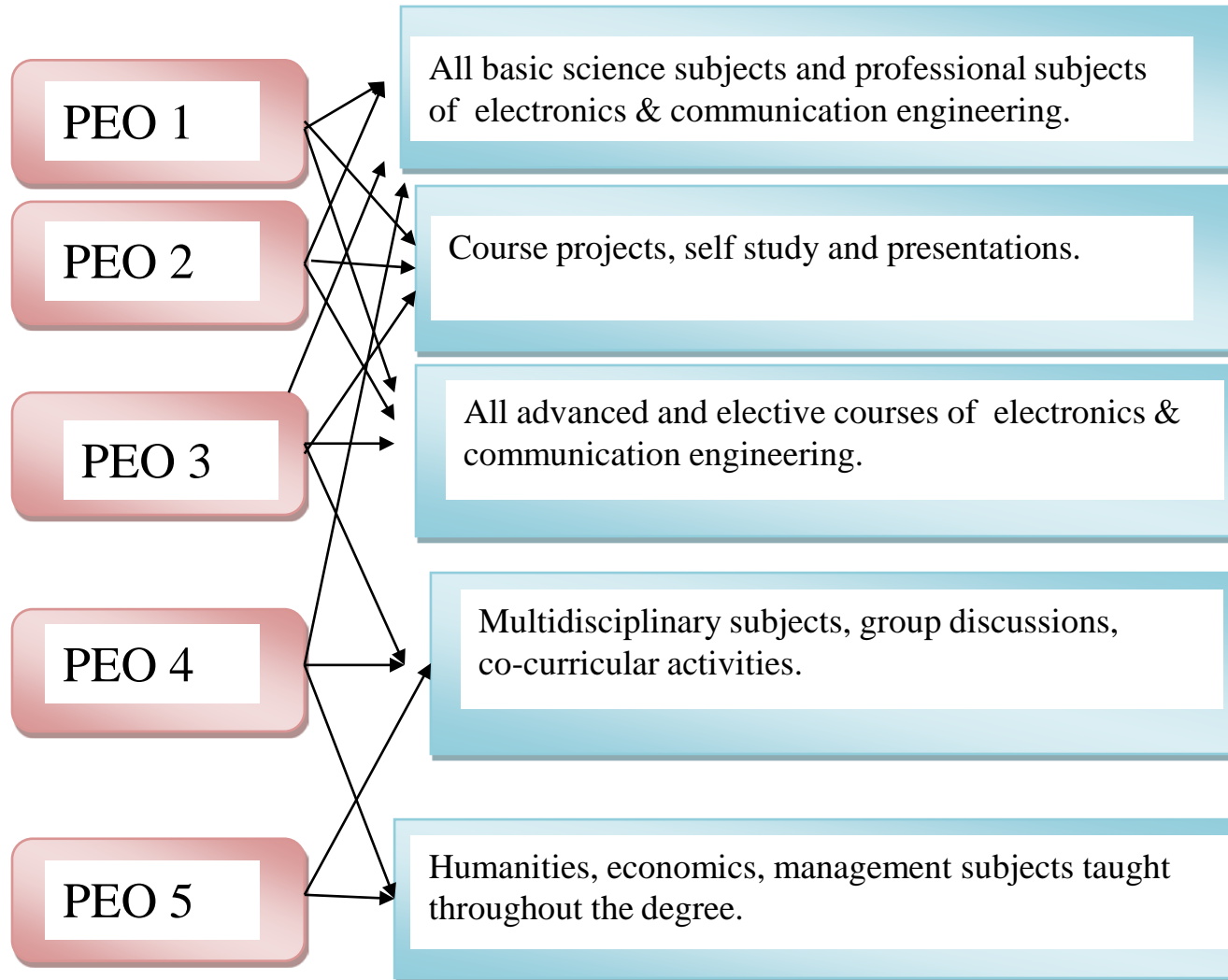
Keeping in view the Mission of the Department and University.

MAPPING OF UNIVERSITY MISSION WITH PEOs

Mission Component	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	Correlation (%)
M1. Holistic development of students	H	H	H	H	H	100
M2. Valued-centered teaching in professional specialization	H	H	H	M	M	86.7
M3. Preparation or leadership roles	M	M	H	H	H	86.7
M4. Environment of inclusiveness and cultural diversity	M	H	M	H	H	86.7
Correlation (%)	83.3	91.7	91.7	91.7	91.7	

H- High correlation (3)
M-Medium (2)
L- Low (1)

Academic factors involved in achievement of PEOs

PEO 1

PEO 2

PEO 3

PEO 4

PEO 5

All basic science subjects and professional subjects of electronics & communication engineering.

Course projects, self study and presentations.

All advanced and elective courses of electronics & communication engineering.

Multidisciplinary subjects, group discussions, co-curricular activities.

Humanities, economics, management subjects taught throughout the degree.

Attainment of each PEO can be judged from….

- Number of students placed in industries after the completion of the degree programme.

- Percentage of students qualifying GRE, GATE, TOEFL and other competitive exams.

- Number of students going for PG programmes in reputed institutions in India and abroad.

- Involvement of students in various projects and their contribution in conferences, workshops.
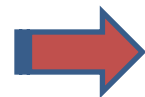
Program Outcomes

PO1. Students should be able to solve problems through analytical thinking.

PO2. Students should develop skills to solve problems in electronics and communication engineering using mathematical techniques and scientific knowledge.

PO3. Students should be able to employ necessary techniques, hardware and software tools for engineering applications.

PO4. Students should be able to synthesize solutions for existing problems within practical constraints.

PO5. Students should be able to communicate effectively both orally and in writing.

PO6. Students should be able to write project proposals, devise implementation strategies and plan execution.

PO7. Students should be aware of contemporary issues and their implications.

PO8. Students should have strong ethical and professional responsibility and adherence to quality.

Process for Designing POs

POs and Graduate Attributes

No.	Graduate Attributes of NBA	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Correlation (%)
1	Engineering Knowledge	H	H	H	H	H	H	H	M	**95.8**
2	Problem analysis	H	H	H	H	H	H	M	M	**91.7**
3	Design/development of solutions	H	H	H	H	M	H	H	M	**91.7**
4	Conduct investigations of complex problems	H	H	H	H	M	H	H	M	**91.7**
5	Modern tool usage	M	H	H	H	M	H	H	M	**87.5**
6	The engineer and Society	H	H	M	M	H	L	H	H	**83.3**
7	Environment and sustainability	M	M	M	H	H	M	H	H	**83.3**
8	Professional Ethics	M	M	H	M	M	H	H	H	**83.3**
9	Individual and team work	H	H	H	H	H	H	M	M	**91.7**
10	Communication	M	M	H	M	H	H	M	H	**83.3**
11	Life-long learning	H	H	H	H	H	H	H	H	**100**
	Correlation (%)	**87.8**	**90.9**	**93.9**	**90.9**	**87.8**	**95.9**	**90.9**	**81.8**	

Correlation of PEOs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Correlation (%)
PEO1	H	H	H	H	M	H	M	H	**91.6**
PEO2	H	H	H	H	M	H	H	M	**91.6**
PEO3	H	H	H	H	H	H	M	M	**91.6**
PEO4	H	M	M	H	H	H	H	H	**91.6**
PEO5	M	H	M	M	H	M	H	H	**83.3**
Correlation (%)	**93.3**	**93.3**	**86.6**	**93.3**	**86.6**	**93.3**	**86.6**	**86.6**	

Course Outcomes Contribution to POs

S.No	Courses	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
1	All Core courses, All basic Science Courses	Have a thorough understanding of the fundamental concepts and techniques in the various topics related to electronics and communication engineering	H	H	H	H	M	H	M	M	**87.5**
2	Core and elective courses	Wherever the course requires, the students should be having ability to use software and hardware tools to solve engineering problems	H	H	H	H	H	H	M	M	**91.6**
3	All core courses and elective courses	The students should have in depth knowledge of the subject and should be able to apply the knowledge analytically	H	H	H	H	H	M	H	M	**91.6**
4	Advanced Courses	Through practical assignments, experience will be achieved by the students and they will be able to learn the various design methods for solving a problem.	H	H	H	H	M	H	H	H	**95.8**
5	Humanities Courses	Student should have strong professional ethics and should be able to do work in team possesing leadership quality/	M	L	M	M	H	H	H	H	**80.0**
			93.3	**86.6**	**93.3**	**93.3**	**86.6**	**86.6**	**86.6**	**80**	

Course Outcomes of core subjects along with mapping with POs   (Annexure I)

Mapping of CO with PO
Sample Subject- Digital Electronics

S. No.	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
1	Have a thorough understanding of the fundamental concepts and techniques used in digital electronics.	H	H	H	H	M	H	M	H	91.6
2	To understand and examine the structure of various number systems and its application in digital design.	H	H	M	H	H	H	M	H	91.6
3	The ability to understand, analyze and design various combinational and sequential circuits.	H	M	M	H	H	H	H	H	91.6
4	Ability to identify basic requirements for a design application and propose a cost effective solution.	H	H	H	H	H	H	H	M	95.8
5	The ability to identify and prevent various hazards and timing problems in a digital design.	H	H	H	M	M	H	H	H	91.6
6	To develop skill to build, and troubleshoot digital circuits.	M	H	H	H	H	H	H	M	91.6
	Correlation (%)	94.4	94.4	88.8	94.4	88.8	100	88.8	88.8	

Modes of delivery for attainment of POs

The following pedagogy is used for courses:
- Lectures
- Quiz
- Tutorials
- Assignments
- Group Discussion
- Self-study Presentations
- Course Projects
- Laboratory exercises

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- **eLearning online materials** : eBooks
- **NPTEL http://nptel.iitm.ac.in**
- **MIT Open Courseware http://ocw.mit.edu/index.htm**

Correlation of lab courses with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
Electrical Circuits Lab	H	H	H	H	M	H	M	M	87.5
Computer Programming Lab	H	H	H	H	M	H	H	H	95.8
Basic Electronics Lab	H	H	H	H	M	H	M	H	91.6
Data Structures and Computer Programming Lab	H	H	H	H	M	H	M	M	87.5
Signals and Systems Lab	H	H	H	H	M	H	M	M	87.5
Analogue Electronics Lab	H	H	H	H	M	H	M	M	75.5
Multimedia Development Lab I	H	M	L	M	M	H	M	H	87.5
Devices and Circuit simulation Lab	H	H	H	H	H	H	H	H	100
Digital Electronics Lab	H	H	H	H	H	M	M	H	91.6
Analogue Communications Lab	H	H	H	H	H	H	M	H	95.8
Unix Programming Lab	L	H	M	M	M	H	H	M	75.5

Contd.....

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
Digital Communications Lab	H	H	H	H	H	H	H	M	95.8
Digital Signal Processing Lab	H	H	M	H	M	H	M	H	87.5
Microprocessors and Controllers Lab	H	H	H	H	M	H	M	H	91.6
Electromagnetics Lab	H	H	H	H	H	M	M	M	87.5
Controls Systems Lab	H	H	H	H	H	H	M	M	91.6
Telecommunication Networks Lab	H	H	H	H	M	M	H	H	91.6
VLSI Lab	H	H	H	H	H	H	H	M	95.8
Object Oriented Systems and Programming Lab	H	H	H	H	M	H	H	H	95.8
Power Electronics Lab	H	H	H	H	H	M	M	M	87.5
Industrial Training	L	M	H	H	M	H	H	H	83.3
Project	H	H	H	H	H	H	H	H	100
%	93.9	96.9	96.9	100	84.8	90.9	84.8	84.8	

Correlation of evaluation methods with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
Assignment	H	H	H	H	M	H	H	H	95.8
Quiz	H	H	M	M	M	H	H	M	83.3
Tutorial	H	H	H	M	H	H	M	M	87.5
Mid Sem Exam	H	H	M	H	H	M	H	H	91.6
Course projects	H	H	H	H	H	H	H	M	95.8
End Sem Examinations	H	H	M	H	H	M	M	H	87.5
Self Study Presentation	H	H	M	H	H	H	H	M	91.6
%	100	100	85.7	90.5	90.5	95.2	90.5	81.0	

ASSESMENT TOOLS (Theory Courses)

Mid Term	30
End Term	45
Assignment	5
Quiz	5
Attendance	5
Self Study presentation	5
Project	5
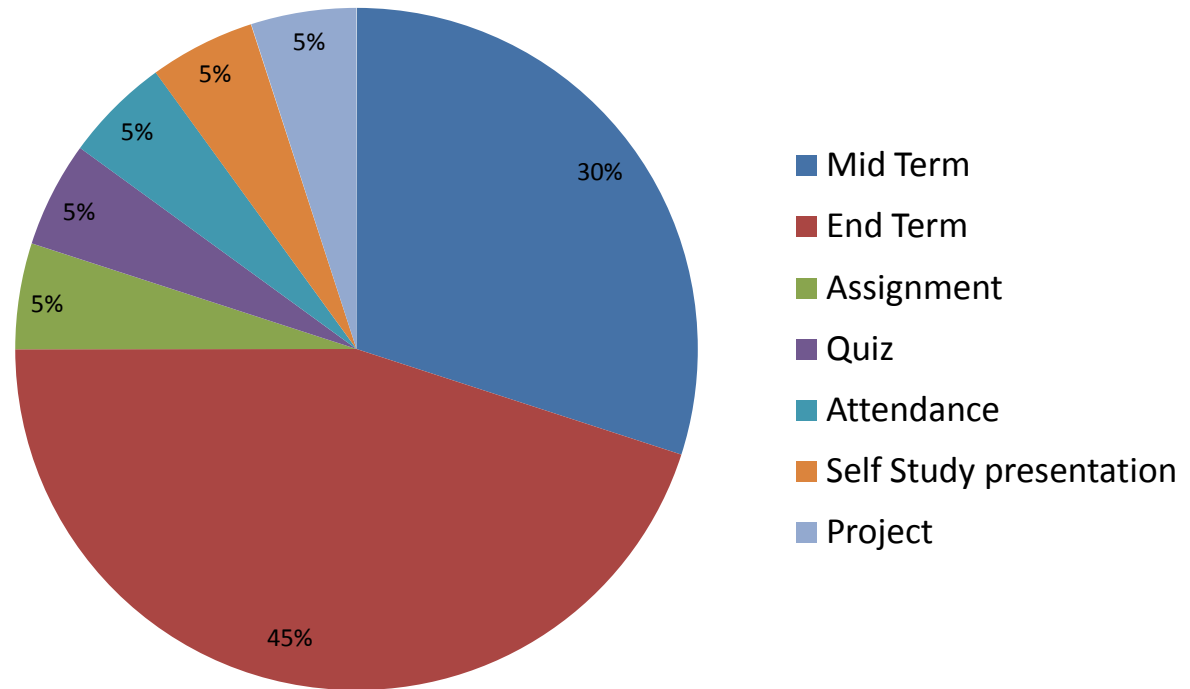
ASSESMENT TOOLS (Laboratory Courses)

Project Assignment	10
Mid-Sem Exam/Viva	20
Final Exam/Viva	40
Continuous Evaluation	20
Attendance	10

Legend:
- Project Assignment
- Mid Sem Evaluation
- Final Exam/Viva
- Continuous Evaluation
- Attendance
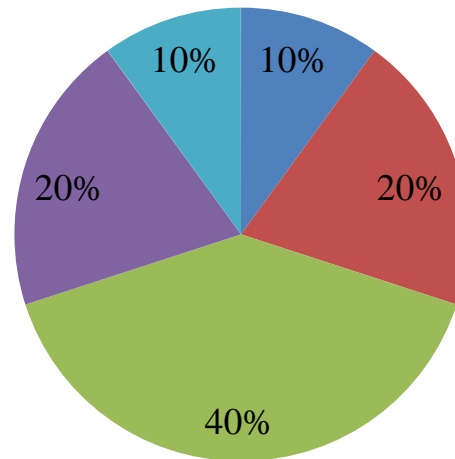
Distribution of lab and course work
in terms of contact hours per week
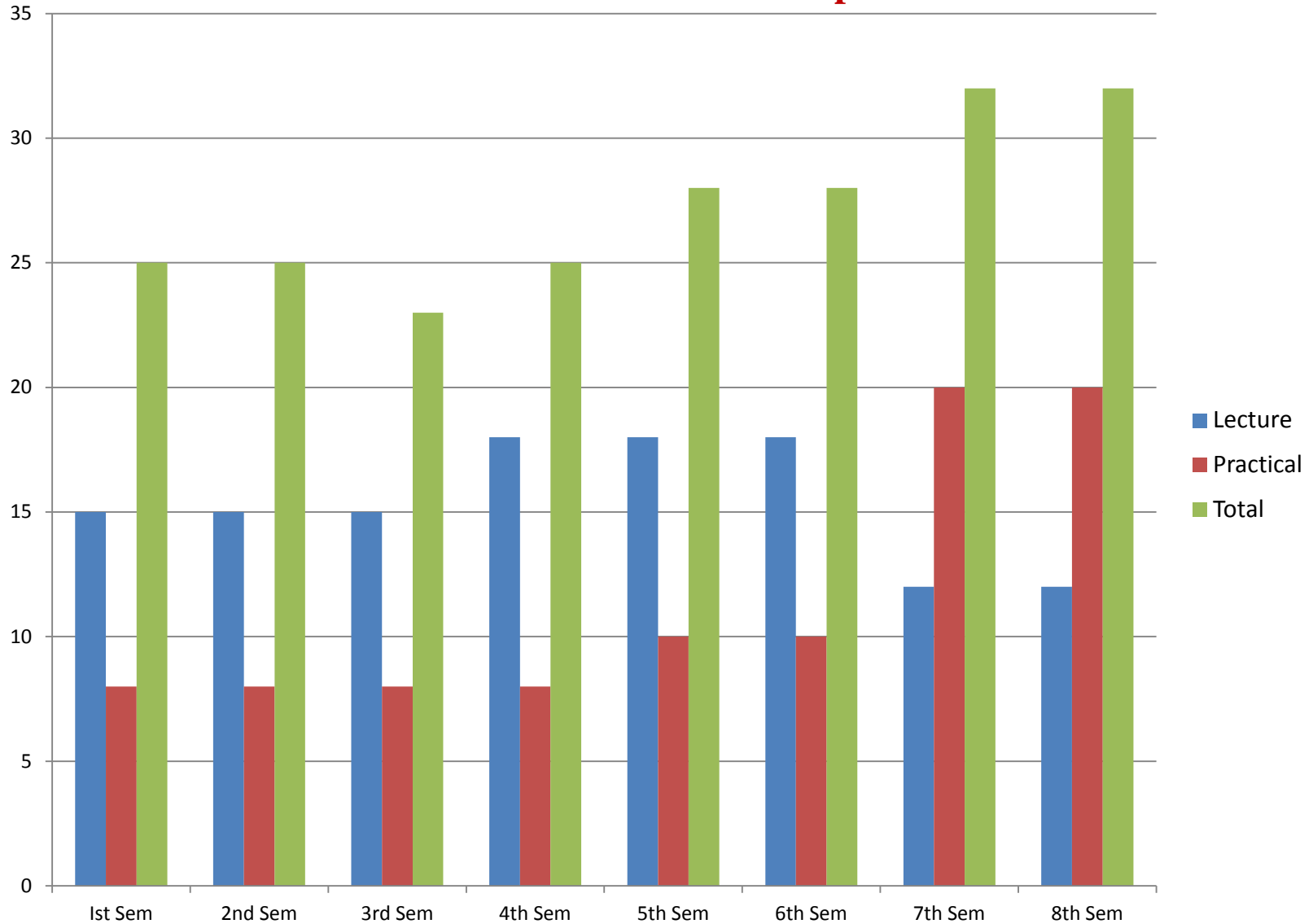
Programme Structure

Syllabi Annexure II

FIRST SEMESTER		
Course Code	Course Title	Credits
10B11PD111	Presentation and Communication Skills	3
10B11MA111	Mathematics-I	4
10B11PH111	Physics-I	4
10B11EC111	Electrical Circuit Analysis	4
10B11CI111	Introduction to Computers and Programming	4
10B17PH171	Physics Lab-I	1
10B17EC171	Electrical Circuits Lab	1
10B17CI171	Computer Programming Lab	2

SECOND SEMESTER		
Course Code	Course Title	Credits
10B11PD211	Group and Cooperative Processes	3
10B11MA211	Discrete Mathematics	4
10B11PH211	Physics-II	4
10B11EC211	Basic Electronic Devices and Circuits	4
10B11CI211	Data Structures	4
10B17PH271	Physics Lab-II	1
10B17EC271	Basic Electronics Lab	1
10B17CI271	Data Structures and Computer Programming Lab	2

THIRD SEMESTER		
Course Code	Course Title	Credits
10B11PD311	Managerial Economics	3
10B11MA201	Mathematics-II	4
10B11EC311	Electrical Machines and Instruments	4
10B11EC301	Signals and Systems	4
10B11EC312	Analogue Electronics	4
10B17EC371	Electrical Machines and Instruments Lab	1
10B17EC307	Signals and Systems Lab	1
10B17EC372	Analogue Electronics Lab	1
10B28CI408	Multimedia Development Lab I	1

FOURTH SEMESTER		
Course Code	Course Title	Credits
10B11PD411	Financial Management	3
10B11MA411	Probability Theory and Random Processes	4
10B11EC411	Semiconductor Devices	4
10B11EC401	Digital Electronics	4
10B11EC412	Analogue Communications	4
10B11GE411	Environmental Studies	3
10B17EC471	Devices and Circuit simulation Lab	1
10B17EC407	Digital Electronics Lab	1
10B17EC472	Analogue Communications Lab	1
10B17CI307	Unix Programming Lab	1

FIFTH SEMESTER			SIXTH SEMESTER		
Course Code	**Course Title**	**Credits**	**Course Code**	**Course Title**	**Credits**
10B11PD511	Social and Legal Issues	3	10B11PD611	Project Management	3
10B11EC511	Digital Communications	4	10B11EC611	Telecommunication Networks	4
10B11EC512	Digital Signal Processing	4	10B11EC612	VLSI Technology and Applications	4
10B11CI401	Microprocessors and Controllers	4	10B11PH611	Material Sciences	4
10B11EC513	Electromagnetic Engineering	4	10B11CI614	Object Oriented Systems and Programming	4
10B1WEC515	Theory and application of Controls Systems	4	10B1WEC613	Power Electronics	4
10B17EC571	Digital Communications Lab	1	10B17EC671	Telecommunication Networks Lab	1
10B17EC572	Digital Signal Processing Lab	1	10B17EC672	VLSI Lab	1
10B17CI407	Microprocessors and Controllers Lab	1	10B17CI674	Object Oriented Systems and Programming Lab	2
10B17EC573	Electromagnetics Lab	1	10B19GE698	Industrial Training	0
10B17EC515	Controls Systems Lab	1	10B17EC673	Power Electronics Lab	1

SEVENTH SEMESTER		
Course Code	Course Title	Credits
	PD Elective-I	3
	DE-I	3
	DE-II	3
	DE-III	3
10B11EC791	Project Part I	10

EIGHTH SEMESTER		
Course Code	Course Title	Credits
	PD Elective-II	3
	DE-IV	3
	DE-V	3
	DE-VI	3
10B19EC891	Project Part II	10

Elective Subjects For 7th SEMESTER	
10MI1EC111	Advanced Communication Systems
10M11EC113	Advanced Telecommunication Networks
12B1WEC732	Digital System Design
10B1WEC734	Fundamentals of Digital Image Processing
11B1WEC731	Intelligent Control Systems
10B1WEC731	Mobile Communication
11B11WEC834	Optical Communication System
14B1WEC733	Embedded Systems
10M11EC114	VLSI Circuits and System Design

Elective Subjects For 8th SEMESTER	
10M11EC211	Advanced Digital Signal Processing
10M11EC212	Advanced Wireless and Mobile Communications
13B11WEC833	Bio Electronics Sensor
10M21EC224	CMOS Digital Design Techniques
10M11EC213	Information & Coding Theory
10B1WEC836	Network Synthesis
13B1WEC832	Modern Antennas
10B13EC839	Linux and Its Applications
11B1WEC232	Software Defined Radio

| Elective Subjects For Humanities	
11B1WHS835	Academic Writing
13 B1WHS833	Industrial Sociology
13 B1WHS832	International Business Management
13B1WHS834	Internet Marketing
10B1WPD831	Leadership in Organizations
11B1WPD832	Strategic Management
07B81PD402	Consumer behavior

Total Credit   **195**

Prerequisite flow chart of courses

(Engineering Courses)
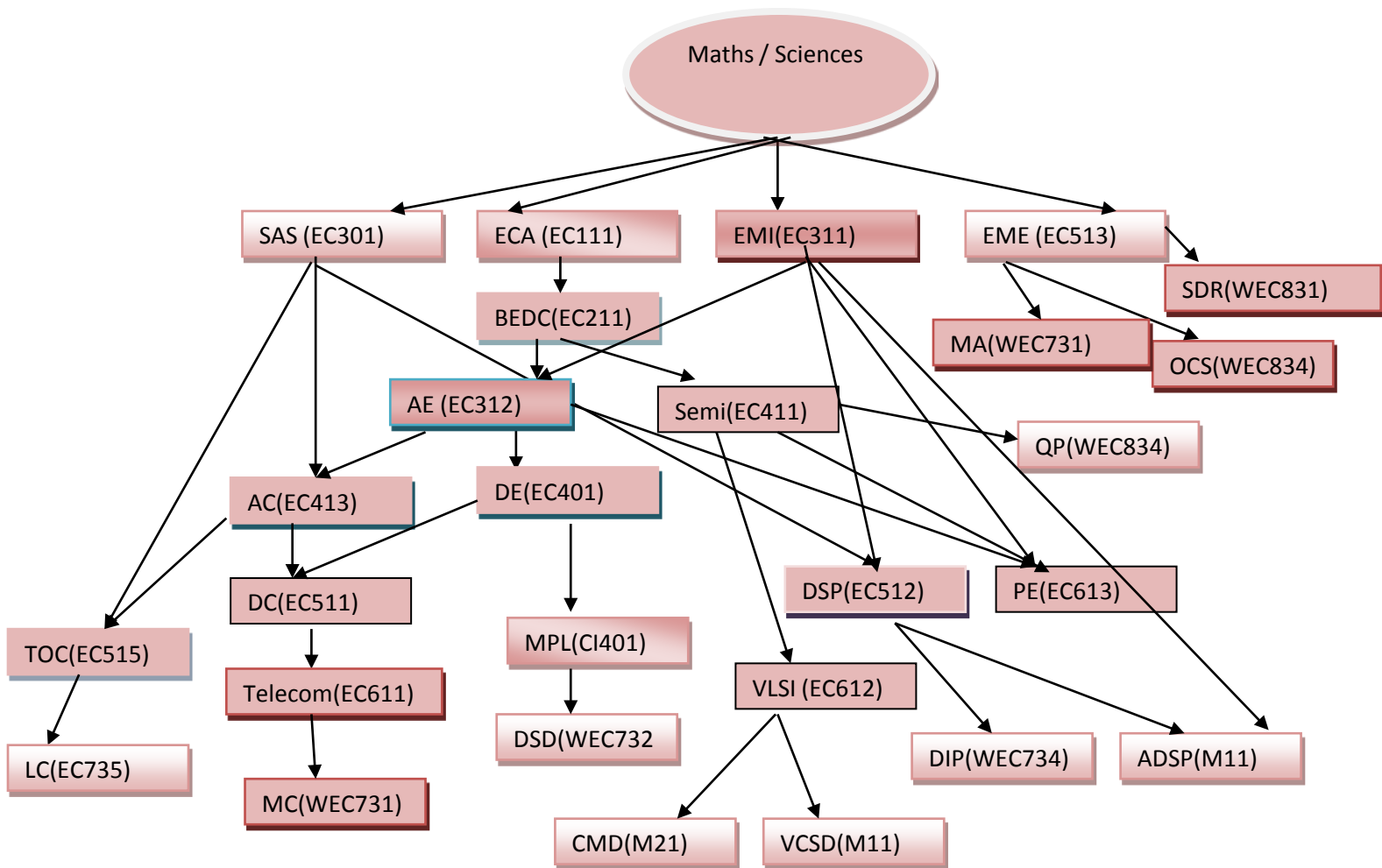
Components of Curriculum
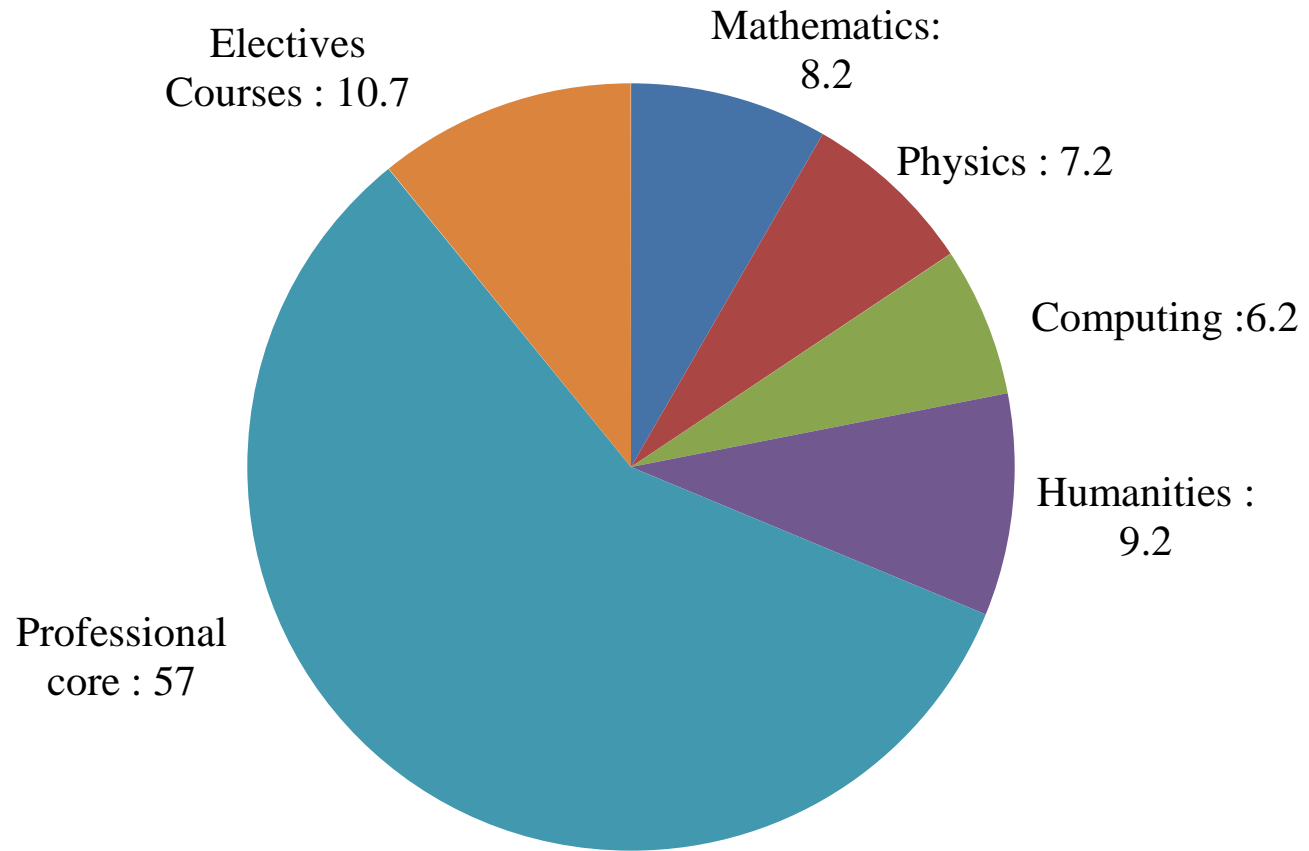
Figures in %

Components of curriculum
and their relevance to the POs and the PEOs

Course Component	Curriculum Content (% of total number of credits of the programme)	Total number of contact hours	Total Number of credits	POs	PEOs
Mathematics	8.2	16	16	1,2,3,4,6	1,2,3,4
Physics	7.2	16	14	1,2,3,4,6	1,2,3,4
Computing	6.2	16	12	1,2,3,4,6	2,3,4,5
Humanities	9.2	18	18	3,4,5,7,8	3,4,5
Professional core	57.0	145	111	1,2,3,4,5,6,7	1,2,3,4,5
Electives Courses	10.7	21	21	2,3,4,6,7,8	1,2,3,4,5
All /Total	100	225	195		

Relevance of Core Engineering Subjects to POs

S.No	Course Code	Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	%
1	10B11EC111	Electrical Circuit Analysis	H	H	M	H	M	M	M	M	79.16
2	10B11EC211	Basic Electronic Devices and Circuits	H	H	M	H	H	M	M	M	83.3
3	10B11EC311	Electrical Machines and Instruments	H	H	M	M	M	M	M	M	75
4	10B11EC301	Signals and Systems	H	H	M	M	M	M	M	M	75
5	10B11EC312	Analogue Electronics	H	H	H	M	M	M	M	H	83.3
6	10B11EC411	Semiconductor Devices	H	H	M	M	H	M	M	M	79.16
7	10B11EC401	Digital Electronics	H	H	M	H	M	M	H	M	83.3

| S.No	Course Code	Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	%
8	10B11EC412	Analogue Communications	H	H	H	M	M	H	M	M	83.33
9	10B11EC511	Digital Communications	H	H	H	H	M	M	H	M	87.5
10	10B11EC512	Digital Signal Processing	H	H	M	M	M	M	M	H	79.16
11	10B11EC513	Electromagnetic Engineering	H	H	M	M	M	M	H	M	79.16
12	10B11EC611	Telecommunication Networks	H	H	H	H	M	M	M	M	83.3
13	11B1WEC611	Power Electronics	H	H	H	M	H	M	H	M	87.5
14	10B11EC612	VLSI Technology and Applications	M	H	H	M	H	H	H	M	87.5

Industry Interaction / Internship

- **Curriculum requires 6 weeks of industrial training.**

- **The project / training enables the student to understand the business process and makes them ready for the corporate careers ahead.**

- **The elective subjects floated to the students in the seventh and eighth semester of final year are designed keeping in mind the requirements from the industry.**

- **University has signed a memorandum of understanding (MOUs) with various organizations for collaboration, internship and training of the students.**

Curriculum Design

Board of Studies

PEO/ PO

Academic Council

Governing Council
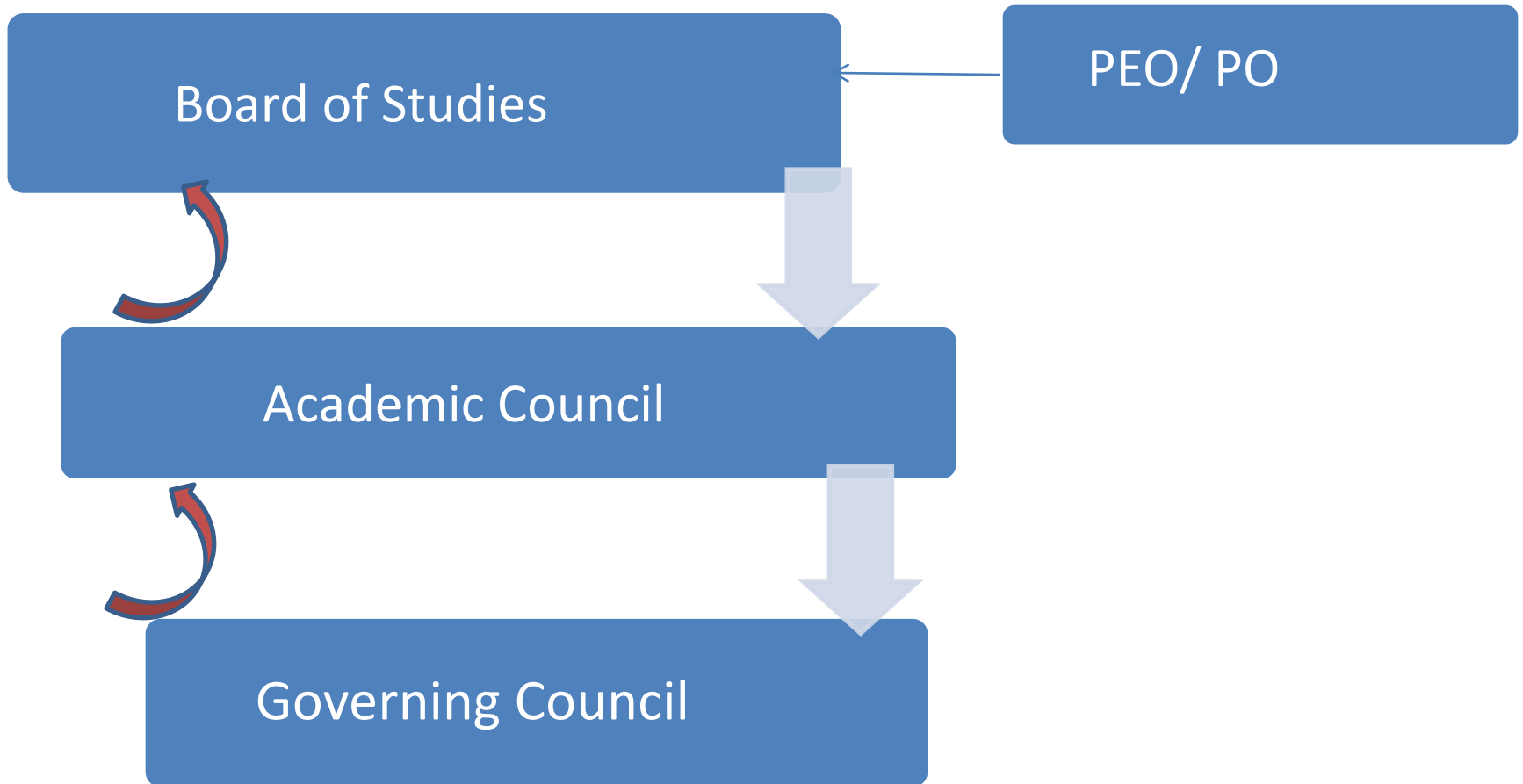
Curriculum Improvement
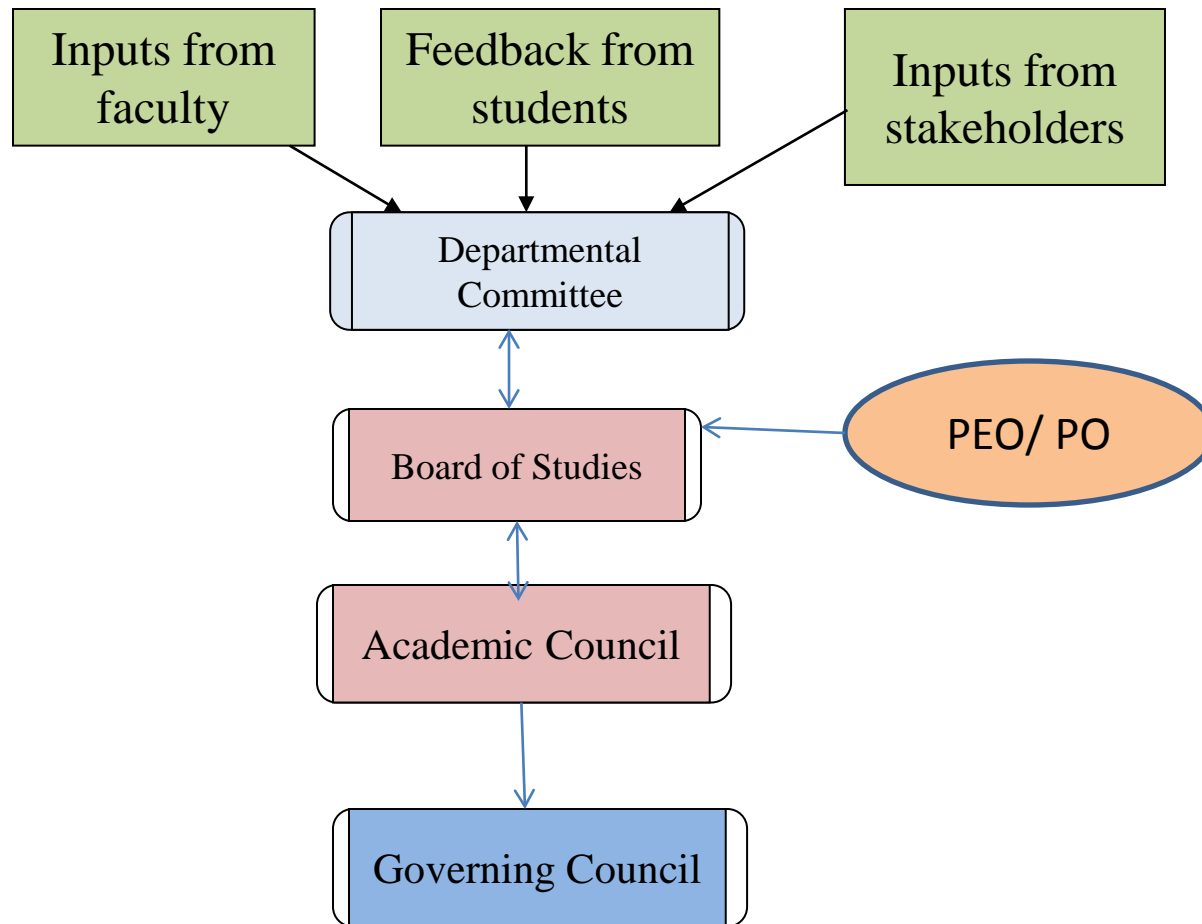


Curriculum Improvement

SUCCESS RATE

Year of Entry	Number of Students admitted in 1st year + admitted via lateral entry in 2nd year (N1 + N2)	Number of Students successfully completed			
		1st year	2nd year	3rd year	4th year
CAY (2014-15)	107				
2013-14	104	101			
2012-13	115	106	109	-	-
2011-12	113	78	99	114	-
2010-11 (LYG)	127	102	96	109	117
2009-10	112	101	90	91	99
2008-09	128	106	116	115	117
2007-08	148	129	122	135	139

SUCCESS RATE contd….

Item	(2014)	(2013)	(2012)	(2011)
Number of students admitted in the corresponding First Year + admitted via lateral entry in 2nd year	127	112	128	148
Number of students who have graduated in the stipulated period	117	111	111	139
Success index (SI)	0.921	0.991	0.867	0.939
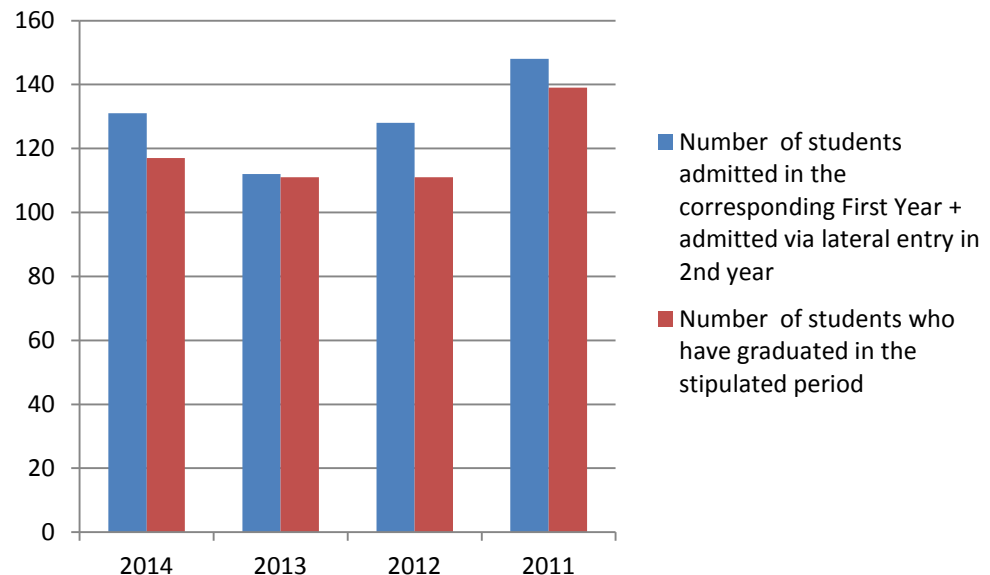
Academic Performance
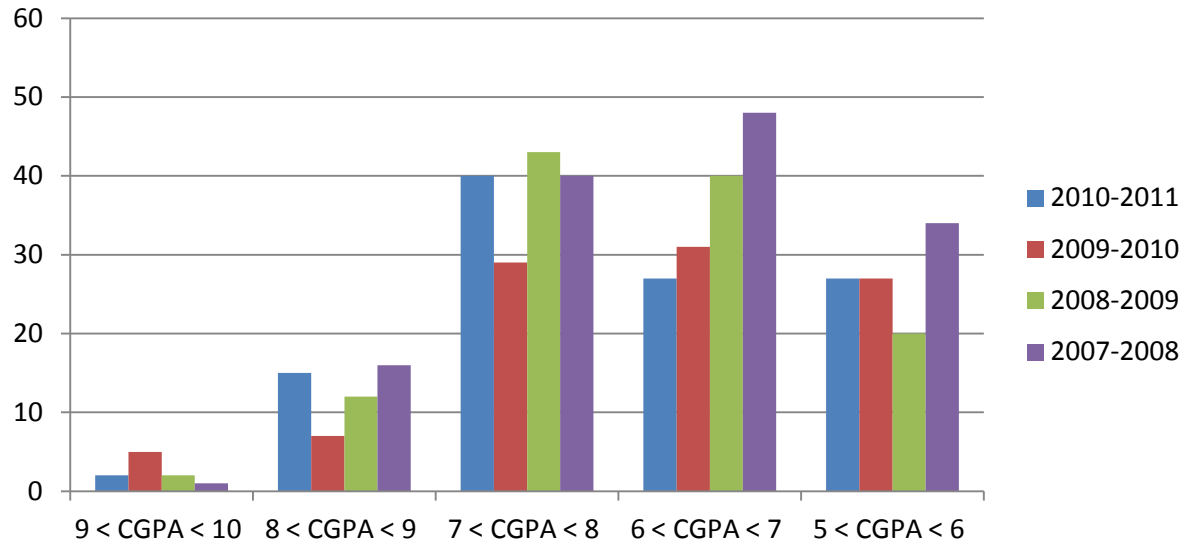
Item (CGPA)	2010-2011	2009-2010	2008-2009	2007-2008
9 < CGPA < 10	2	5	2	1
8 < CGPA < 9	15	7	12	16
7 < CGPA < 8	40	29	43	40
6 < CGPA < 7	27	31	40	48
5 < CGPA < 6	27	27	20	34

Placements and Higher Studies

Item	2010-2011	2009-2010	2008-2009	2007-2008
Number of admitted students corresponding to LYG including lateral entry (N)	127	112	128	148
Number of students who obtained jobs as per the record of placement office (X_1)	85	40	101	120
Number of students who found employment otherwise at the end of the final year (X_2)	7	5	2	1
Number of students who opted for higher studies with valid qualifying scores/ranks (Y)	15	15	12	10
$X = X_1 + X_2$	92	45	103	121

Project Work

- Course Projects for every subject.

- Major Project (VII SEM & VIII SEM).

- PUBLICATIONS in conferences & journals.

List of Projects Annexure III

Professional Activities

- IEEE Student Branch

- Annual Technical Fest — Murious

- Conferences (IEEE ISPCC 12, IEEE ISPCC 13)

- Workshops (LabView, MATLAB, Robotics Workshop, Photoshop Workshop)

- Alvida, Reverie Magazine

- Paper presentation in conferences, publication in journals.

Journals	Conferences	Total (for last 3 years)
4	12	16

Co-curricular Activities

➢ Jaypee Youth Club (JYC)

➢ Cultural Club

➢ Environment Club

➢ Sports Club

➢ Dramatics Club

➢ ROTRACT club

➢ Annual Fest — Le Fiestus

➢ Participation in other institution's fest

(IIT Bombay, IIT Roorkee, JIIT Noida, BITS Pilani, NIT Jalandhar, Jamia Millia Islamia, etc.)

Faculty

Designation	Number
Professor	4
Associate Professor	2
Asst. Professor (SG)	6
Asst. Professor (G-II)	11
Asst. Professor (G-I)	2
Total	25

Student -Teacher Ratio

Year	x	y	z	$x + y + z$	N_1	STR
CAY$m2$ (2011-12)	127	116	125	368	24	15.33
CAY$m1$ (2012-13)	113	127	116	356	24	14.83
CAY (2013-14)	111	113	133	357	24	14.88

x = Number of students in 2nd year of the programme
y = Number of students in 3rd year of the programme
z = Number of students in 4th year of the programme
N_1 = Total number of faculty members in the programme
   (by considering fractional load)

Faculty Cadre Ratio

Year	x	y	N	CRI
CAY$m2$ (**2011-12**)	**6**	1	**26**	**1.00**
CAY$m1$ (**2012-13**)	**6**	**1**	**24**	**1.00**
CAY (**2013-14**)	**5**	**2**	**24**	**1.00**

x = Number of professors in the programme
y = Number of associate professors in the programme
N_1 = Total number of faculty members in the programme

CRI = 2.25 × (2x + y)/N

Faculty Qualification

| Qualification	Number
Ph. D.	12
M. Tech.	13
Total	25

Research Areas

- Speech and Image Processing
- Communication Engineering
- Antenna and Arrays Design
- Mobile and Wireless Communication
- Wireless Sensor Networks
- Biomedical Signal Processing
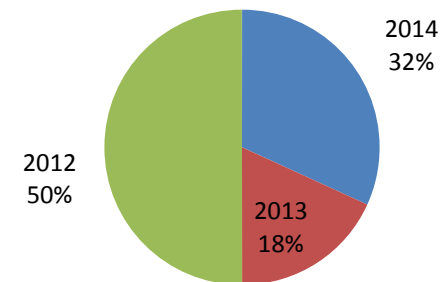- Microelectronics and VLSI

Publication Summary (last 3 years)

Year	Journals	Conferences	Total
2013-14	27	14	41
2012-13	28	7	35
2011-12	33	19	52
Total	88	40	128

Journal(s)

2012 39%
2014 15%
2013 46%

Conference(s)

2014 32%
2012 50%
2013 18%

FRP DETAILS Annexure V
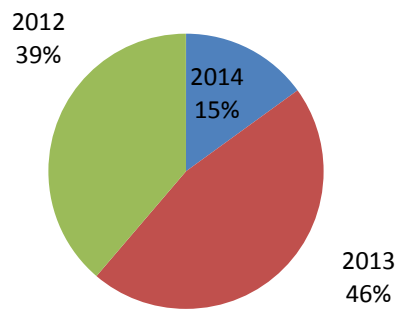
Books (last 3 years)

1. V. M. Srivastava and **G. Singh**, "MOSFET Technologies for Double-Pole Four-Throw Radio-Frequency Switch", *Springer*, 2014 [ISBN: 978-3-319-01164-6].

2. K. R. Jha, and **G. Singh**, "Terahertz Planar Antennas for Next Generation Communication" *Springer*, 2014 [ISBN: 978-3-319-02340-3].

3. N N Bhargava, **D.C. Kulshreshtha**, S C Gupta. "Basic Electronics and Linear Circuits", 2nd Ed., *McGraw Hill Education*, 2013. 2014 [ISBN : 9789332901100].

4. **Sunil Bhooshan**, "Fundamentals of Engineering Electromagnetics", *Oxford University Press, India, and USA*, 2012 [ISBN-10: 0198077947]

5. **D C Kulshreshtha**, "Basic Electrical Engineering", *McGraw Hill Education.* 2012 [ISBN – 978-007-132896-8].

6. **Shruti Jain**, "Synthetic Biology : Towards Digital Circuit", *VDM Veralag , Mauritius*, 2011 [ISBN-10: 3639338111]

Sponsored Projects

Principal Investigator	Project Title	Duration	Fund and Funding Agency
Dr. Ghanshyam Singh	Design and analysis of frequency selective surface at Ka/Ku Band for reflection and S Band for transmission	2011-2014 (3 yrs.)	15.96 Lakhs ISRO
Dr. Shruti Jain	Fabrication of energy Harvesting Prototypes using Piezoelectric Materials	2012-2014 (2 yrs.)	9.8 Lakhs DRDO
Dr. Pradeep Kumar	Design and Investigation of Antennas and Arrays for Millimeter Wave Applications	3 yrs. (accepted)	5.27 lakhs DST

Conferences/Workshop organized

Module description	Duration	Resource persons
IEEE International Conference ISPCC2013	3 days (26-28 Sep, 2013)	**Prof John Shrogan,** University of Strathclyde, Glasgow **Prof Andrea Conti** University of Ferrara, Italy & MIT, USA **Prof Surinder Prasad,** Former Director IITD **Prof Rajinder Bahl,** IITD. **Miroslav Skoric,** IEEE Section, Austria; NIAR, India
Workshop, Lecture Series	23 Sept. to 5 Oct,.2012	**Dr. Veena B. Mendiratta,** Bell Labs, Alcatel-Lucent , Naperville, USA
IEEE International Conference ISPCC2012	3 days (15 -17 March, 2012)	**Prof Sydney Burrus** , Rice University **Dr Subhalakshmi Kher,** Arkansas State University
Summer School on Wireless Sensor Networks	5th – 9th July, 2011	**Dr Subhalakshmi Kher,** Arkansas State University
Workshop on LABVIEW	2-days (17-18 Feb.,2011)	**Mr. Karun Jain** Experts from NI

Cont….

Module description	Duration	Resource persons
Workshop on LABVIEW and its applications	24th April 2014 (Thursday)	**Er. Sanjay Saini (Applications Engineer – National Instruments)**
Workshop on MATLAB	6 days 11-16 Nov 2013	**Faculty JUIT**
Simulation capabilities of COMSOL Multiphysics	Friday, May 30, 2014	**Mr. Shantanu Chaudhary**
VoIP workshop Resource Person :	5 days April 14th to April 18th 2014,	**Faculty JUIT**

Laboratories

Sr. no.	Laboratory	Equipments	Labs Being Run	Area in Sq. m
1	**ECE Lab 1 (Basic Electronics lab)**	CROs , Power Supplies Signal Generators Multimeters, Bread board ICs, Discrete Components	1. Basic Electronics Lab 2. Electrical Circuit Analysis Lab 3. Power Electronics Lab	91sq m
2	**ECE Lab 2 (Electrical Science lab)**	Volt-Meter, Watt meter DC supplies, Ammeter Digital storage oscilloscope (DSO), DC motor, Power Supplies, Multimeters, Discrete ComponentsControl System kits,	1. Basic Electronics Lab 2. Electrical Circuit Analysis Lab 3. Control Lab	91sq m
3	**ECE Lab 3**	Micrprocessor Kits, CROs Power Supplies, IC Tester Signal Generators, Multimeters, Bread board ICs, Discrete Components	1. Digital Electronics Lab 2. Analog Electronics Lab	81sq m
4	**ECE Lab4**	Klystron Benches, Gunn Diodes, Transmission Line Kits Antenna Software, Antenna Kit, Spectrum Analyzer	Electromagnetic Engineering Lab	81sq m

Cont….

Sr. no.	Laboratory	Equipments	Labs Being Run	Area in Sq. m
5	**ECE Lab 5**	Digital storage oscilloscope Power Supplies, Multimeters, Signal Generators , Analog Communication Kits, Digital Communication Kits Discrete Components. Distortion Meter	1. Analog Communication Lab 2. Digital Communication Lab 3. Communication Systems Lab	81sq m
6	**ECE Lab 6**	PSPICE, ORCAD, Telecommunication kit, Network Analyzer, Spectrum Analyzer, DSP Kits	1. Research Lab 2. EMI Lab 3. Telecommunication Networks Lab	108sq m
7	**CL Lab 1**	MATLAB, LABVIEW XILINX PSPICE ORACLE JAVA	1. Project Lab 2. Digital Signal Processing Lab 3. Control Lab	98sq m

Laboratories

No.	Laboratory	Name of Technical Staff	Qualification	Designation
1	ECE Lab 1	Jyotsna Bajaj	3-yr Diploma in ECE (B.Tech., M.Tech)	Sr. Lab Engineer
2	ECE Lab 2	Manoj Kumar Pandey	3-yr Diploma in ECE (B.Tech., ECE)	Sr. Lab Engineer
3	ECE Lab 3	Pramod Kumar	3 yrs. Diploma in ECE (B.Tech., ECE)	Sr. Lab Engineer
4	ECE Lab 4	Ajay Kumar Singh	M.Sc (Electronics)	Sr. Lab Engineer

Laboratories (contd.)

No.	Laboratory	Name of Technical Staff	Qualification	Designation
5	ECE Lab 5	Dhirendra Kumar Singh	3-yr Diploma in ECE (B.Tech,.ECE)	Sr. Lab Engineer
		Abhishek Ray	3-yr Diploma in ECE	Lab Assistant
6	ECE Lab 6	Kamlesh Kr Srivastava	B.Sc, 3-yr Diploma in ECE (B.Tech .ECE)	Lab Engineer
7	CL Lab 1	Mohan Lal	3-yr Diploma in CSE,	Lab Technician
		Shambhoo Nath	2-yr ITI Diploma (ECE)	

Available software

Name of Software	License for number of users
MATLAB	60
LABVIEW	40
PSPICE	5
HFSS	1
CST	1
XILINX	30
ORCAD	10

Budget details

Items	Budgeted (2013-14)	Actual Expenses (2013-14)	Budgeted (2012-13)	Actual Expenses (2012-13)	Budgeted (2011-12)	Actual Expenses (2011-12)
Laboratory Equipment	735000	1056923	700000	807438	2000000	2207572
Laboratory Consumables	1050000	157966	1000000	116868	100000	101120
Training and Travel	1050000	488457	1000000	1017488	2500000	2428475
Total	3135000	1703346	2700000	1941794	4600000	4737167

Overall Improvements since last Accreditation

Strengths/ weakness	Improvement brought in	Contributed by	List the PO(s), which are strengthened
2012-13 2013-14 *Curriculum*	New elective subjects introduced for seventh and eighth semester	Faculty	1,2,3,4,6
2013-14 *Curriculum*	Syllabus of subjects modified	Faculty	1,2,3,4.6
2011-12 *Lab Facility*	Latest software procured	University	1,2,3,4,7
2012-2013 *Lab Facility*	Labs improved (Comm Lab, ESL)	University	1,2,3,4

Success Index of Students

Item	2010-2011	2009-10	2008-09	2007-08
Number of students admitted in the corresponding First Year + admitted via lateral entry in 2nd year	127	112	128	148
Number of students who have graduated in the stipulated period	117	99	117	139
Success Index (*SI*)	0.92	0.88	0.91	0.94

Success rate = 20 × mean of success index (*SI*) for past three batches.
SI = (Number of students who graduated from the programme in the stipulated period of course duration) / (Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry)

Academic Performance Index of Students

API = Academic Performance Index

(Mean of cumulative grade point average
(CGPA) of all successful students on a
10- point CGPA system)

Items	2009-10 (c)	2008-09 (b)	2007-08 (a)
API	0.68	0.70	0.68

a, b, c are improvements in percentage during three successive years, assessment can be calculated as

Assessment = (b-a)/(100-min (b,a)) + (c-b)/(100-min(c,b))

Assessment of Student-Teacher Ratio

Items	2013-14 (c)	2012-13 (b)	2011-12 (a)
Assessment of STR	0.74	0.74	0.77

Enhancement of Faculty Qualification Index

Items	2013-14 (c)	2012-13 (b)	2011-12 (a)
FQI	0.92	0.93	0.83

a, b, c are improvements in percentage during three successive years, assessment can be calculated as

$$Assessment = (b-a)/(100-min\ (b,a)) + (c-b)/(100-min(c,b))$$

THANK YOU..

Key steps in drawing up Vision and Mission statements

Drawing up of a draft statement in Departmental meeting as a basis for further discussions.

→

Preparing the final draft in Board of Studies meeting.

→

Sent for approval to Academic Council and Governing Body.

TOOLS

- Placement of the students
- Feedback from the employers
- Alumni Feedback
- In-house Assessments

PROCESSES used in assessment of the attainment of the PEOs

The ECE Program Educational Objectives are determined and evaluated through a regular consultation and examination process that involves four core constituents: Students, Alumni, Industry, and Faculty.

Student input is obtained through student feedback, interaction with Student Senate, exit interviews with graduating students, student evaluation forms, and individual faculty-student advisee interaction.

Alumni input is obtained through regular meetings with alumni representatives, surveys with ECE department alumni, and exit surveys with graduating students.

Faculty input is obtained through departmental committees, regular faculty meetings, and departmental retreats.

Process for Designing POs
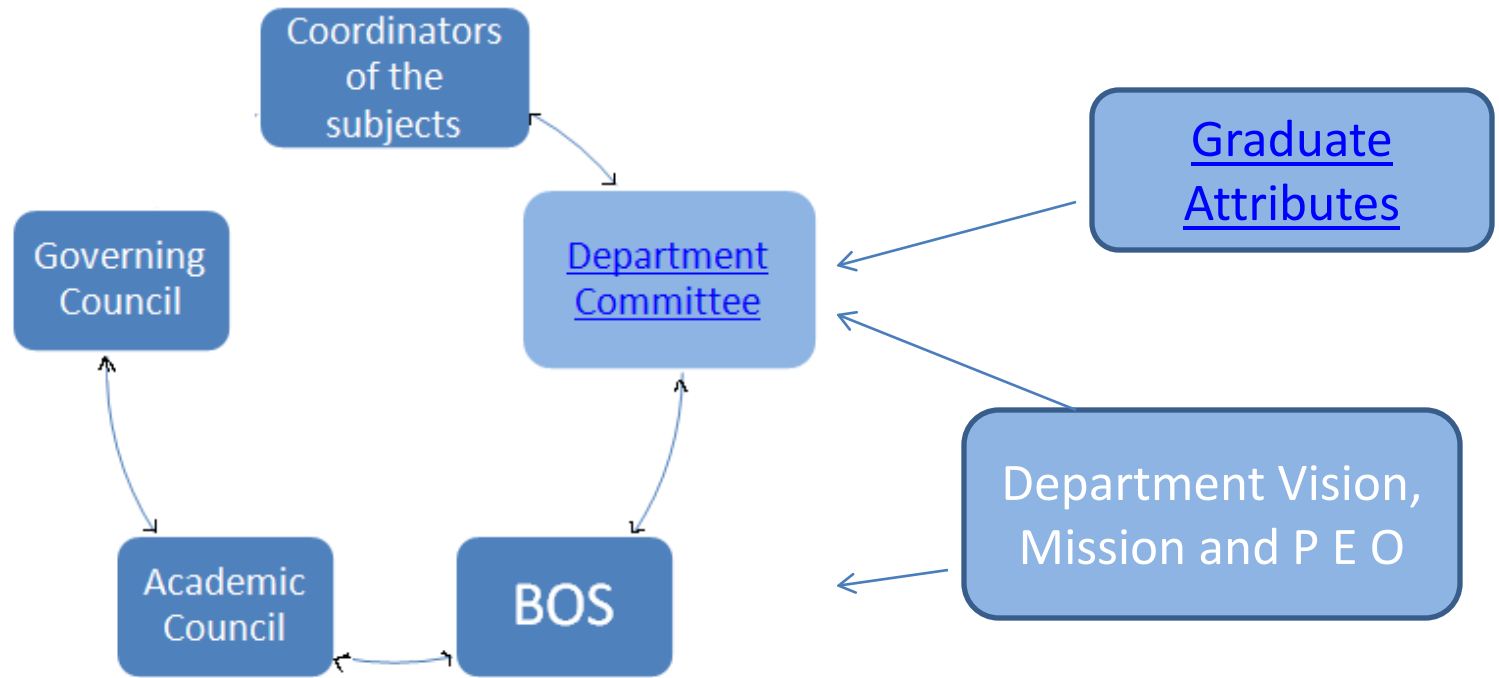
- ❑ Attendance at national and international conference permits interaction with colleagues and ample opportunity for discussions of trends in the discipline.
- ❑ A seminar series in which speakers from academic and fields visit the department and spend the day in discussion with the faculty on wide range of topics.
- ❑ Library and individual subscription to journals and magazines that report on current events of relevance to the educational programme.

Department Committees

- Curriculum Development

- Project Evaluation

- Training & Placement

- Research Development

- Load distribution & Time table Committee

- Web Maintenance

- Result Modulation

Correlation between POs and COs

No	Course Code	Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	%
1	10B11PD111	Presentation and Communication Skills	L	L	L	L	H	H	M	M	58.3
2	10B11MA111	Mathematics-I	H	H	M	H	M	H	L	M	79
3	10B11PH111	Physics-I	H	H	H	M	L	M	H	H	83.3
4	10B11EC111	Electrical Circuit Analysis	H	H	M	H	M	M	L	M	75
5	10B11CI111	Introduction to Computers and Programming	H	H	H	H	M	M	L	L	75
6	10B11PD211	Group and Cooperative Processes	H	L	L	H	H	H	H	H	83.3
7	10B11MA211	Discrete Mathematics	H	H	M	M	H	M	L	M	75
8	10B11PH211	Physics-II	H	H	M	H	M	M	H	M	83.3
9	10B11EC211	Basic Electronic Devices and Circuits	H	H	M	H	H	M	L	M	79
10	10B11CI211	Data Structures	M	H	M	M	M	M	M	M	70.8
11	10B11PD311	Managerial Economics	H	H	M	H	M	M	H	M	83.3
12	10B11MA201	Mathematics-II	H	H	M	H	M	H	L	M	79

No	Course Code	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
13	10B11EC311	Electrical Machines and Instruments	H	H	M	M	M	L	M	M	71
14	10B11EC301	Signals and Systems	H	H	M	M	M	M	M	M	75
15	10B11EC312	Analogue Electronics	H	H	H	M	M	M	M	H	83.3
16	10B11PD411	Financial Management	L	L	L	M	M	H	M	M	58.3
17	10B11MA411	Probability Theory and Random Processes	H	H	M	H	M	H	M	M	83
18	10B11EC411	Semiconductor Devices	H	H	L	M	H	L	M	M	79.2
19	10B11EC401	Digital Electronics	H	H	M	H	M	M	H	M	83.3
20	10B11EC412	Analogue Communications	H	H	H	M	M	H	M	M	83.33
21	10B11GE411	Environmental Studies	L	L	L	L	L	H	H	M	54.2
22	10B11PD511	Social and Legal Issues	M	L	L	L	M	M	H	H	62.5
23	10B11EC511	Digital Communications	H	H	H	H	L	M	H	M	83.3
24	10B11EC512	Digital Signal Processing	H	H	M	L	M	M	M	H	75
25	10B11CI401	Microprocessors and Controllers	M	M	H	M	H	M	M	M	75
26	10B11EC513	Electromagnetic Engineering	H	H	M	M	L	M	H	M	75

S.No	Course Code	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
27	10B11PD611	Project Management	L	M	M	M	L	H	M	M	62.5
28	10B11EC611	Telecommunication Networks	H	H	H	H	L	M	M	M	79.1
29	11B1WEC611	Power Electronics	H	H	H	M	H	L	H	M	83
30	10B11EC612	VLSI Technology and Applications	M	H	H	M	H	H	H	M	87.5
31	10B11PH611	Material Sciences	M	H	M	H	L	M	M	L	66.7
32	10B11CI614	Object Oriented Systems and Programming	M	H	H	H	M	M	M	M	79.1
33	10M11EC211	Advanced Digital Signal Processing	H	H	M	M	H	M	M	H	83.3
34	10M11EC212	Advanced Wireless and Mobile Communications	H	H	M	H	M	H	M	M	83.3
35	13B11WEC833	Bio Electronics Sensor	H	M	H	L	L	H	H	M	75
36	10M21EC224	CMOS Digital Design Techniques	M	M	H	M	M	H	H	M	79.2
37	10M11EC213	Information & Coding Theory	H	H	H	H	L	M	H	M	87.5
38	10B1WEC836	Network Synthesis	H	M	H	L	L	H	H	M	75
39	13B1WEC832	Modern Antenna	H	H	M	H	M	H	M	M	83.33
40	10MI1EC111	Advanced Communication Systems	H	H	H	H	M	H	M	L	83.3

S.No	Course Code	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	%
41	12B1WEC732	Digital System Design	H	H	H	H	M	H	H	L	87.5
42	10B1WEC734	Fundamentals of Digital Image Processing	H	H	H	M	H	M	M	M	83.3
43	10B13EC839	Linux and Its Applications	H	H	H	H	M	L	L	H	79.2
44	10B1WEC731	Mobile Communication	H	H	M	H	M	H	M	M	83.3
45	11B11WEC834	Optical Communication System	H	H	M	H	M	H	M	M	83.3
46	11B1WEC232	Software defined radio	M	H	H	H	M	H	H	L	83.3
47	10B1WE515	Theory and Applications of Control Systems	H	H	M	H	M	M	M	M	79.1
48	14B1WEC734	Non-Linear and Digital Control Systems	H	H	M	H	M	H	M	M	83.3
49	13B1WEC731	CMOS Analog Circuit Design	H	M	H	M	M	H	H	M	83.3
50	14M1WEC231	Advance Neural Networks	H	H	H	H	M	H	H	M	91.6
51	10M11EC114	VLSI circuits and system design	H	H	H	M	M	H	H	M	87.5
52	14B1WEC735	Fundamentals of embedded systems	H	H	H	M	M	H	H	M	87.5

PROCESS FOR REVISING POs
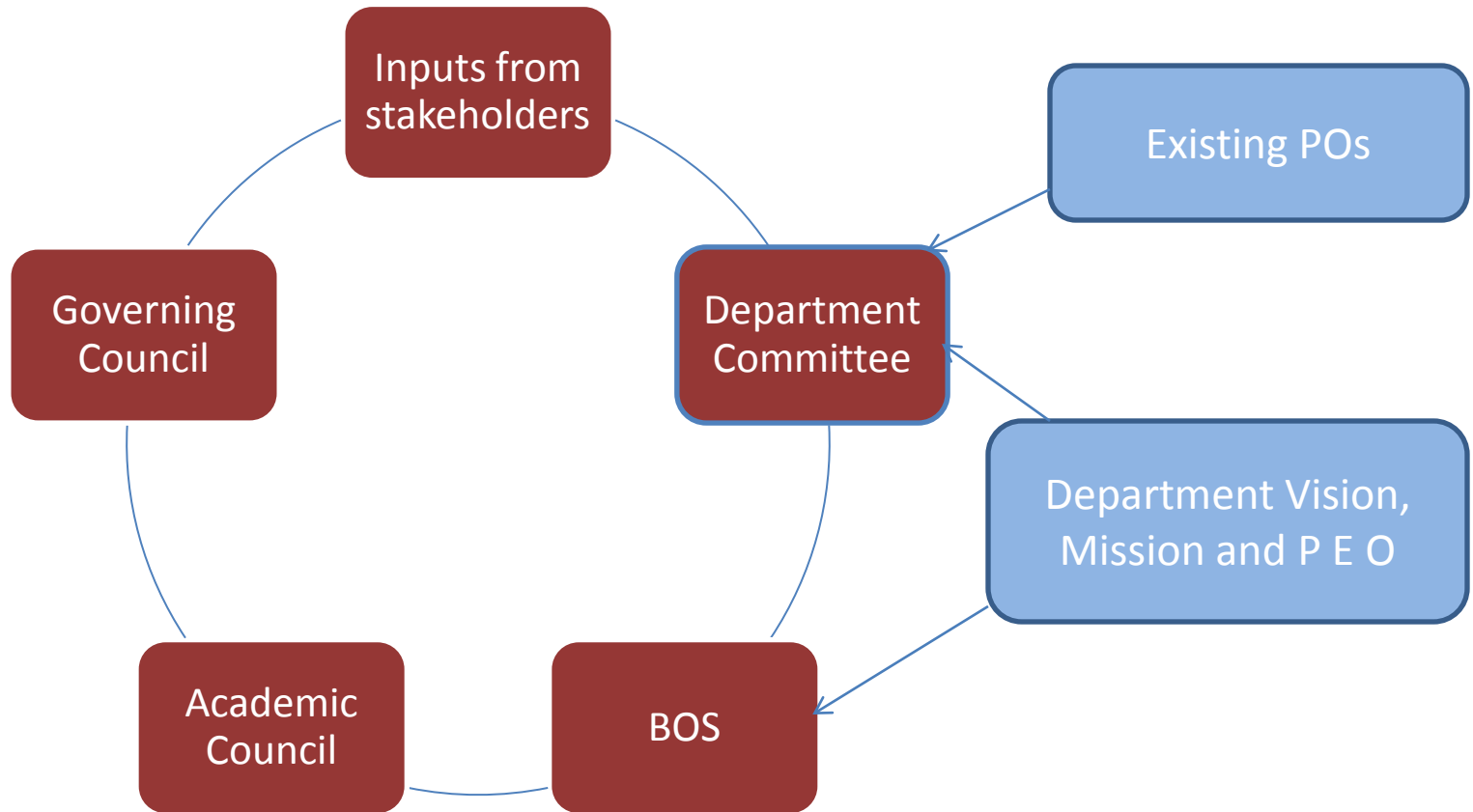
Curricular improvements

❖The feedback obtained from interviewers and industry delegates who had either hired or interviewed our students was used to emphasize the importance of fundamental concepts, analytical thinking and practical scenarios in the curriculum.

❖The results of the evaluation are communicated to the entire department and a departmental meeting ensues to propose changes in the curriculum so that the attainments of PO's are maximized.

❖BOS reviews all the proposals put forward in the departmental meeting and finalizes
❖BOS puts forward its recommendations to the Academic Council of the University.

❖The Academic Council then deliberates on the proposals put forward to Governing Council which gives approval and communicates the approved proposal back to the department for implementation.