Department of Electronics & Communication Engineering

Annual Report
2017-18

SWAMI VIVEKANANDA INSTITUTE OF SCIENCE & TECHNOLOGY, SONARPUR

PREAMBLE

The Department of *Electronics & Communication Engineering* of **Swami Vivekananda Institute of Science & Technology, Sonarpur** has started its glorious journey in the year 2008. The newly built department has the exposure in focusing the students' need in imparting excellence and need based technical education for building up prospective career of the students.

The department has the mission to build up the students' need with beautiful ambience, highly qualified faculty, a modern high-tech laboratory, and well stocked books on Electronics & Communication Engineering subjects in the library and set up a placement cell keeping in view of the career opportunity of the students coming out in the year 2017.

On this year remarkable interest in higher studies, attending the conferences and seminars, paper publications etc. have been observed among the faculty members.

Availability of faculty in context to related subjects is always scarce; however, two new faculties has already joined in which one of them is a research scholar from University of Kolkata. Further action has already been initiated to recruit faculties as needed.

In modernization program, Embedded Systems laboratory has been setup. Some of our students are given hands-on training by our faculty Mr. Raju Paul and Mr. Sayantan Talukdar.

On this year, a noticeable improvement in students' attendance is observed. Many students of 2nd year and 3rd year have achieved more than 90% attendance. Students' performance in semester examinations is also on the higher side.

In regard to future placement, all students of 4th year are doing training programs at various Companies. It is expected that reputed companies would come for campus recruitment in due course.

Expecting better achievements during the ensuing years to come.

Institution Name: Swami Vivekananda Institute of Science &Technology, Sonarpur

1.0 NAME OF THE DEPARTMENT: Electronics & Communication Engineering

2.0 YEAR OF STARTING OF THE PROGRAMME: 2008

3.0 AICTE APPROVAL DETAILS OF THE DEPARTMENT:

(a) Date of first approval by AICTE with reference number (for 90 seats)
Reference : 06/ 02/ WB/ ENGG /2008 /04
Date : 30th June, 2008

(b) Date of approval by AICTE for current academic year with reference number
Reference : Eastern/ 1-3509290445/ 2018 /EOA
Date : 04 April, 2018

(c) Approval by West Bengal University of Technology for the current academic year with reference number
Reference : 241/ B. Tech/ Affiliation/ 2018-19
Date : 15th May, 2018

4.0 PROGRAMME DETAILS: *B-Tech in Electronics & Communication Engineering*

(a) Nature of Programme: Full time

(b) Duration: 4 years

(c) Sanction Intake: 90

(d) Year wise students:

B. Tech (2017-18)	1st Year	2nd Year	3rd Year	4th Year
No of students	66	91	96	66

Lateral entry –20% in 3rd Semester

5.0 COURSE STRUCTURE:

(As per Affiliating University)

List of Subjects

Sl. No.	Subject Code	Subject
First Semester		
1	HU101	English Language& Technical Communication
2	PH101	Physics – 1
3	M101	Mathematics-1
4	ES101	Basic Electrical & Electronics Engineering – 1
5	ME101	Engg. Mechanics
6	PH191	Physics – 1Laboratory
7	ES191	Basic Electrical & Electronics Engineering-1Laboratory
8	ME192	Workshop Practice
9	HU181	Language Laboratory
10	XC181	Extra-Curricular Activities (NSS/NCC/NSO etc.)
Second Semester		
11	CS201	Basic Computation &Principles of Computer Programming
12	CH201	Chemistry-1
13	M201	Mathematics-2
14	ES201	Basic Electrical &Electronic Engineering-II
15	ME201	Engineering Thermodynamics & Fluid Mechanics
16	CS291	Basic Computation &Principles of Computer ProgrammingLaboratory

17	CH291	Chemistry-1Laboratory
18	ES291	Basic Electrical &Electronic Engineering- IILaboratory
19	ME292	Basic Engg Drawing &Computer Graphics
Third Semester		
20	M (CS) 301	Numerical Methods
21	M302	Mathematics-III
22	EC301	Circuit Theory & Networks
23	EC302	Solid State Device
24	EC 303	Signals & Systems
25	EC 304	Analog Electronic Circuits
26	M (CS)391	Numerical Methods Laboratory
27	EC 391	Circuit Theory & Network Lab
28	EC 392	Solid State Devices
29	EC 393	Signal System Lab
30	EC 394	Analog Electronic Circuits Lab
Fourth Semester		
31	HU-401	Values and Ethics in Profession
32	PH 401	Physics-II
33	CH-401	Basic Environmental Engineering& Elementary Biology
34	EC-401	EM Theory & Transmission Lines
35	EC-402	Digital Electronic & Integrated Circuits
36	HU-481	Technical Report Writing & Language Lab Practice
37	PH-491	Physics-II Laboratory
38	EC-491	EM Theory & Transmission Lines Laboratory

39	EC-492	Digital Electronic & Integrated Circuits Laboratory
Fifth Semester		
40	HU-501	Economics for Engineers
41	EC-501	Analog Communication
42	EC-502	Microprocessors & Microcontrollers
43	EC-503	Control System
44	EC-504	Elective I
45	EC-591	Analog Communication
46	EC-592	Microprocessors & Microcontrollers
47	EC -593	Control System
48	EC -594	Elective I Laboratory
Sixth Semester:		
49	HU-601	Principles of Management
50	EC-601	Digital Communications
51	EC-602	Digital Signal Processing
52	EC-603	Telecommunication System
53	EC-604	Elective II
54	EC-605	Elective III
55	EC-691	Digital Communications Laboratory
56	EC-692	Digital Signal Processing Laboratory
57	EC-693	Elective III Laboratory
58	EC-681	Seminar
Seventh Semester		
59	EC-701	Wireless Communication & N/W
60	EC-702	Microelectronics & VLSI Designs
61	EC-703	Elective IV
62	EC-704	Elective V
63	EC-705	Elective VI
64	HU-781	Group Discussion
65	EC-792	VLSI Design laboratory
66	EC-793	Elective IV Laboratory
67	EC-795	Elective VI Laboratory
68	EC-781	Seminar onIndustrial Training
69	EC-782	Project Part I

Eighth Semester		
70	HU801A	Organizational Behavior / Project Management
71	EC-801	Elective VII
72	EC-802	Elective VIII
73	EC-881	Design Lab / Industrial problem related practical training
74	EC-882	Project Part II
75	EC-893	Grand Viva

6.0 COURSE STRUCTURE:

List of Subjects

First Semester:

Theory		Contact hours per week				Credit Point	Marks				
Code	Subject	L	T	P	Total		UT1/2	Attendance	Assignment	Total Internal	Total External
HU101	ENGLISH LANGUAGE & TECHNICAL COMMUNICATION	2	0	0	2	2	15	5	10	30	70
PH101	PHYSICS-1	3	1	0	4	4	15	5	10	30	70
M101	MATHEMATICS-1	3	1	0	4	4	15	5	10	30	70
ES101	BASIC ELECTRICAL & ELECTRONICS ENGINEERING – 1	3	1	0	4	4	15	5	10	30	70
ME 101	ENGG. MECHANICS	3	1	0	4	4	15	5	10	30	70
Total Theory					18	18					

Practical		Contact hours per week				Credit Point	Marks		
Code	Subject	L	T	P	Total		Total Internal	Total External	TOTAL
PH191	PHYSICS	0	0	3	3	3	40	60	100
ES191	BASIC ELECTRONIC ENGINEERING	0	0	3	3	3	40	60	100
ME192	Workshop Practice	1	0	3	4	4	40	60	100
Total Practical					10	10			

SESSIONAL		Contact hours per week				Credit Point	NONE Marks		
		L	T	P	Total		NONE Total Internal	Total External	TOTAL
HU181	LANGUAGE LABORATORY	0	0	2	2	2	40	60	100
XC181	EXTRA CURRICULAR ACTIVITIES (NCC/NSS/NSO etc.)	0	0	2	2	2	40	60	100
	Total of Sessional				4	4			
	Total of Semester				32	32			

List of Subjects

Second Semester:

Theory		Contact hours per week				Credit Point	NONE Marks				
Code	Subject	L	T	P	Total		UT1/2	Attendance	Assignment	Total Internal	Total External
CS 201	BASIC COMPUTATION & PRINCIPLES OF COMPUTER PROGRAMMING	3	1	0	4	4	15	5	10	30	70
CH201	CHEMISTRY	3	1	0	4	4	15	5	10	30	70
M201	MATHEMATICS-2	3	1	0	4	4	15	5	10	30	70
ES201	BASIC ELECTRICAL & ELECTRONIC ENGINEERING-II	3	1	0	4	4	15	5	10	30	70
ME201	ENGINEERING THERMODYNAMICS & FLUID MECHANICS	3	1	0	4	3	15	5	10	30	70
Total Theory					20	20					
Practical		Contact hours per week				Credit Point	Marks				
Code	Subject	L	T	P	Total		Total Internal		Total External		TOTAL
CS291	BASIC COMPUTATION & PRINCIPLES OF COMPUTER PROGRAMMING	0	0	2	3	3	40		60		100
CH291	CHEMISTRY	0	0	3	3	3	40		60		100
ES291	BASIC ELECTRICAL ENGINEERING	0	0	2	3	3	40		60		100
ME292	BASIC ENGG DRAWING & COMPUTER GRAPHICS	1	0	3	4	3	40		60		100
Total Practical		0	0		10	6					
Total Semester					28	21					

List of Subjects

Third Semester:

Theory		Contact hours per week				Credit Point	Marks				
Code	Subject	L	T	P	Total		UT1/2	Attendance	Assignment	Total Internal	Total External
M (CS) 301	NUMERICAL METHODS	2	1	0	3	2	15	5	10	30	70
M302	MATHEMATICS-III	3	1	0	4	4	15	5	10	30	70
EC 301	CIRCUIT THEORY & NETWORKS	3	0	0	3	3	15	5	10	30	70
EC 302	SOLID STATE DEVICE	3	0	0	3	3	15	5	10	30	70
EC 303	SIGNALS & SYSTEMS	3	1	0	4	4	15	5	10	30	70
EC 304	ANALOG ELECTRONIC CIRCUITS	3	1	0	4	4	15	5	10	30	70
Total Theory					20	20					

Practical		Contact hours per week				Credit Point	Marks		
Code	Subject	L	T	P	Total		Total Internal	Total External	TOTAL
M (CS) 391	NUMERICAL METHODS LABORATORY	0	0	3	3	2	40	60	100
EC 391	CIRCUIT THEORY & NETWORK LAB	0	0	2	2	1	40	60	100
EC 392	SOLID STATE DEVICES	0	0	3	3	2	40	60	100
EC 393	SIGNAL SYSTEM LAB	0	0	3	3	2	40	60	100
Total Practical					11	7			
Total Semester					31	27			

List of Subjects

Fourth Semester:

Theory		Contact hours per week				Credit Point	NONE Marks				
Code	Subject	L	T	P	Tota l		UT1 /2	Attendance	Assignment	Total Internal	Total External
HU-401	Values and Ethics in Profession	3	0	0	3	3	15	5	10	30	70
PH 401	Physics-II	3	0	0	4	4	15	5	10	30	70
CH-401	Basic Environmental Engineering & Elementary Biology	3	0	0	3	3	15	5	10	30	70
EC-401	EM Theory & Transmission Lines	3	0	0	3	3	15	5	10	30	70
EC-402	Digital Electronic & Integrated Circuits	3	1	0	4	4	15	5	10	30	70
Total Theory					21	20					

Practical		Contact hours per week				Credit Point	Marks			
Code	Subject	L	T	P	Tota l			Total Internal	Total External	TOTAL
HU-481	Technical Report Writing & Language Lab Practice	0	0	3	3	2		40	60	100
PH-491	Physics-II Laboratory	0	0	3	3	2		40	60	100
EC-491	EM Theory & Transmission Lines Laboratory	0	0	3	3	2		40	60	100
EC-492	Digital Electronic & Integrated Circuits Laboratory	0	0	3	3	2		40	60	100
Total Practical					12	8				
Total Semester					33	28				

List of Subjects

Fifth Semester:

Theory		Contact hours per week				Credit Point	Marks				
Code	Subject	L	T	P	Total		UT1/2	Attendance	Assignment	Total Internal	Total External
HU-501	Economics for Engineers	3	0	0	3	3	15	5	10	30	70
EC-501	Analog Communication	3	1	0	4	4	15	5	10	30	70
EC-502	Microprocessors & Microcontrollers	3	1	0	4	4	15	5	10	30	70
EC-503	Control System	3	0	0	3	3	15	5	10	30	70
EC - 504	Elective I A. Computer Architecture B. Data structure & C	3	1	0	4	4	15	5	10	30	70
Total Theory					18	18	NONE				

Practical		Contact hours per week				Credit Point	Marks		
Code	Subject	L	T	P	Total		Total Internal	Total External	TOTAL
EC591	Analog Communication	0	0	3	3	2	40	60	100
EC592	Microprocessors & Microcontrollers	0	0	3	3	2	40	60	100
EC593	Control System	0	0	3	3	2	40	60	100
EC594	Elective I Lab A. Computer Architecture B. Data structure & C	0	0	3	3	2	40	60	100
Total Practical					12	8			
Total Semester					30	26			

List of Subjects

Sixth Semester:

Theory		Contact hours per week				Credit Point	Marks				
Code	Subject	L	T	P	Total		UT1/2	Attendance	Assignment	Total Internal	Total External
HU-601	Principles of Management	2	0	0	2	2	15	5	10	30	70
EC-601	Digital Communications	3	0	0	3	3	15	5	10	30	70
EC-602	Digital Signal Processing	3	0	0	3	3	15	5	10	30	70
EC-603	Telecommunication System	3	0	0	3	3	15	5	10	30	70
EC - 604	Elective II A. Antenna Theory & Propagation B. Information Theory & Coding	3	0	0	3	3	15	5	10	30	70
EC-605	Elective –III A. Object Oriented Programming (IT) B. Programming Language (CSE) C. Electronic Measurement & Instrumentation (EI)	3	0	0	3	3	15	5	10	30	70
Total Theory					17	17	NO				

Practical		Contact hours per week				Credit Point	Marks		
Code	Subject	L	T	P	Total		Total Internal	Total External	TOTAL
EC691	Digital Communications	0	0	3	3	2	40	60	100
EC692	Digital Signal Processing	0	0	3	3	2	40	60	100
EC695	Elective –III Lab Object Oriented Programming (IT)	0	0	3	3	2	40	60	100
	Programming Language (CSE)	0	0	3	3	2	40	60	100
	Electronic Measurement & Instrumentation	0	0	3	3	2	40	60	100
Total Practical					12	8			
Total Semester					29	25			

List of Subjects

Seventh Semester:

Theory		Contact hours per week				Credit Point	Marks				
Code	Subject	L	T	P	Total		UT1/2	Attendance	Assignment	Total Internal	Total External
EC-701	Wireless Communication & N/W	3	0	0	3	3	15	5	10	30	70
EC-702	Microelectronics & VLSI Designs	3	0	0	3	3	15	5	10	30	70
EC-703	Elective-IV A. RF & Microwave Engg. B. Optical Communication & N/W C. Computer Networks D. FPGA & Reconfigurable Computing	3	0	0	3	3	15	5	10	30	70
EC-704	Elective-V A. Radar Engg B. Embedded Systems C. Biomedical Instrumentation	3	0	0	3	3	15	5	10	30	70
EC-705	Elective-VI A. Artificial Intelligence (CSE) B. Robotics (CSE) C. Data Base Management System D. Power Electronics	3	0	0	3	3	15	5	10	30	70
Total Theory					15	15					

Practical		Contact hours per week				Credit Point	Marks		
Code	Subject	L	T	P	Total		Total Internal	Total External	TOTAL
HU781	Group Discussion	0	0	3	3	2	40	60	100
EC792	VLSI Design Lab	0	0	3	3	2	40	60	100
EC-793	Elective- IV Lab A. RF & Microwave Engg. Lab B. Optical Communication & N/W Lab C. Computer Networks Lab D. FPGA & Reconfigurable Computing lab	0	0	3	3	2	40	60	100
EC-795	Elective-VI Lab A. Artificial Intelligence Lab (CSE) B. Robotics lab (CSE) C. Data Base Management System Lab (CSE) D. Power Electronics Lab (EE)	0	0	3	3	2	40	60	100
EC-782	Seminar on industrial training.	0	0	3	3	2	40	60	100
EC-782	Project part-I	0	0	3	3	2	40	60	100
Total Practical					15	12			
Total Semester					30	27			

List of Subjects

Eighth Semester:

Theory		Contact hours per week				Credit Point	Marks				
Code	Subject	L	T	P	Total		UT1/2	Attendance	Assignment	Total Internal	Total External
HU-801A	Organizational Behaviour	2	0	0	2	2	15	5	10	30	70
EC-801	Elective-VII A. Smart Antenna B. Digital Image Processing C. Satellite Communication & Remote Sensing transmission	3	0	0	3	3	15	5	10	30	70
EC802	Elective-VIII A. Neural N/W & Applications (CSE) B. Material Sc. & Engg (Mat. Sc) C. Renewable Energy (EE) D. Audio & Speech Processing (CSE)	3	0	0	3	3	15	5	10	30	70
Total Theory					8	8					

Practical		Contact hours per week				Credit Point	Marks		
Code	Subject	L	T	P	Total		Total Internal	Total External	TOTAL
EC881	Design Lab / Industrial problem related practical training	0	0	6	6	4	40	60	100
EC882	Project part-2	0	0	12	12	6	40	60	100
EC893	Grand viva	0	0	0	0	3	40	60	100
Total Practical					18	13			
Total Semester					26	21			

FACULTY PROFILE

Sl. No	Name	Qualification	Date of Birth	Designation	Date of joining
1	Dr. P.K. Saha	B.Sc., B. Tech, M. Tech, PhD		Professor	2/26/2011
2	Chittajit Sarkar	B.Sc., B. Tech, M. Tech, (PhD Registered)	1/3/1977	Associate Professor & HOD	7/1/2011
3	Kakali Gupta	B.E., M.B.M.	6/9/1972	Assistant Professor	8/10/2009
4	Sheershendu Bhattacharya	B. Tech, M. Tech	12/3/1976	Assistant Professor	7/20/2010
5	Antara Das	B.Sc. B. Tech, M. Tech	9/27/1978	Assistant Professor	8/30/2010
6	Supriya Roy	B. E, M. Tech	6/12/1960	Assistant Professor	4/16/2009
7	Anindya Ghosh	AMIE, M. E (PhD Registered)	10/5/1970	Assistant Professor	7/15/2013
8	Susobhan Ray	B. Tech, M. Tech	12/15/1987	Assistant Professor	1/21/2014
9	Nabhojit Dutta	B. Tech, M. Tech	4/1/1984	Assistant Professor	5/13/2014
10	Anindya Sundar Das	B.E, M. E (PhD Registered)	10/3/1980	Assistant Professor	2/1/2016
11	Divya Rao	B.E, M. E	6/26/1983	Assistant Professor	5/11/2014
12	Soumyajit Das	B. Tech, M. Tech	1/4/1985	Assistant Professor	12/1/2012
13	Atreyee Ghosh	B. Tech, M. Tech	8/14/1990	Assistant Professor	8/8/2015
14	Ipsita Ghosh	B. Tech, M. Tech	6/5/1990	Assistant Professor	12/1/2016
15	Arpita Das	B. Tech, M. Tech (PhD Registered)	6/18/1989	Assistant Professor	7/26/2017
16	Sourav Sadhukhan	B. Tech, M. Tech	5/22/1990	Assistant Professor	7/26/2017

7.0 TECHNICAL STAFFS:

1. Mr. Raju Paul
2. Mrs. Yuthika Jana
3. Mrs. Barnali Jana
4. Mrs. Mousumi Dhara
5. Mr. Sayantan Talukdar
6. Ms. Mukta Mitra
7. Ms. Arpita Majhi

8.0 DELEGATION OF RESPONSIBILITY:

Institutional:

- Academic Council: Chittajit Sarkar
- Examination Cell: Sourav Sadhukhan, Barnali Jana, Mukta Mitra
- Routine Committee: Divya Rao, Anindya Sundar Das, Sheershendu Bhattacharya
- Disciplinary Committee: Chittajit Sarkar
- Anti-ragging Committee: Chittajit Sarkar, Sheershendu Bhattacharya, Anindya Ghosh
- Sports committee: Nabhojit Dutta, Susobhan Roy, Mukta Mitra,

Departmental:

- Research and Development: Anindya Sundar Das, Anindya Ghosh, Arpita Das
- University Affairs: Chittajit Sarkar, Sheershendu Bhattacharya
- Students' Mentorship: Ipsita Ghosh, Raju Paul, Yuthika Jana, Sayantan Talukdar
- Departmental Library: Nabhojit Dutta, Mousumi Dhara, Arpita Maji,

9.0 STUDENTS ACTIVITY:

- Organized Blood donation camp.
- Organized and participated in the annual cultural fest 'Enthuzea-2017'.
- Organized and participated in the tech fest.

10.0 SPACE ALLOCATION:

A) Laboratories

Sl. No	Laboratory Name	Room No	Area in Sq. Ft
1	EM THEORY AND TRANSMISSIONS LABORATORY/ RF & MICROWAVE ENGINEERING LABORATORY/	A 201	828
2	DIGITAL ELECTRONICS & INTEGRATED CIRCUITS LABORATORY	A 202	630
3	ANALOG ELECTRONICS LABORATORY	A 207	504
4	SIGNALS AND SYSTEMS/ DIGITAL SIGNAL PROCESSING LABORATORY	A 310	576
5	ANALOG COMMUNICATION/ DIGITAL COMMUNICATION LABORATORY	A 325	576
6	MICROPROCESSORS & MICROCONTROLLERS LABORATORY	A 326	540
7	SOLID STATE DEVICES LABORATORY	A 401	828
8	BASIC ELECTRONICS LABORATORY – I / II	A 404	648
9	EMBEDED SYSTEMS LAB	A 416	324
10	CIRCUIT THEORY & NETWORKS LABORATORY/ VLSI DESIGN LABORATORY/ DESIGN LABORATORY	A 418	756

B) Classrooms

Sl. No	Class room	Room No	Area in Sq. Ft
1	ECE 1st year	A 413	720
2	ECE 2nd year SEC A	A 305	576
3	ECE 2nd year SEC B	A 303	702
4	ECE 3rd year SEC A	A 210	576
5	ECE 3rd year SEC B	A 209	540
6	ECE 4th year SEC A	A 409	540
7	ECE 4th year SEC B	A 311	594

C) Others

Sl. No	Departmental Room	Room No	Area in Sq. Ft
1	HOD room	A 316	324
2	Faculty Room	A 320	504

11.0 RESOURCES:

11.1 DEPARTMENTAL LIBRARY:

Books available: 66

11.2 LABORATORY:

ELECTROMAGNETIC WAVE AND TRANSMISSION LINES LABORATORY ROOM NO. A201 (1st FLOOR)	1. Plotting of Standing Wave Pattern along a transmission line when the line is open-circuited, short-circuited and terminated by a resistive load at the load end.
	2. Input Impedance of a terminated coaxial line using shift in minima technique.
	3. Study of Smith chart.
	4. Radiation Pattern of dipole antenna.
	5. Radiation Pattern of a folded-dipole antenna.
	6. Radiation pattern of a 3-element Yagi-Uda Antenna.
	7. Radiation pattern, Gain, Directivity of a Pyramidal Horn Antenna.
	8. Study of Spectrum Analyzer.
RF & MICROWAVE ENGG LAB ROOM NO. A201 (1st FLOOR)	1. Determination of phase and group velocities in a waveguide carrying TE10 Wave from Dispersion diagram [ω−β Plot].
	2. Measurement of unknown impedance using shift in minima technique using a waveguide test bench/ Measurement of the susceptance of an inductive and or a capacitive window using shift in minima technique using a waveguide test bench
	3. Study of the characteristics of a Reflex Klystron oscillator
	4. Study of Gunn-oscillator Characteristics using X-band waveguide test bench.
	5. Measurement of coupling factor, Directivity, Insertion loss and Isolation of a Directional coupler using X-band waveguide test bench set up.
	6. Scattering matrix of a magic tee / E-plane tee / H-plane tee using waveguide test bench at X-band.
	7. Experimental/Simulation Study of filter (LPF, HPF, BPF) response
DIGITAL ELECTRONICS LABORATORY ROOM NO. A 202 (1st FLOOR)	1. Realization of basic gates using Universal logic gates.
	2. Code conversion circuits- BCD to Excess-3 and vice-versa.
	3. Four-bit parity generator and comparator circuits.
	4. Construction of simple Decoder and Multiplexer circuits using logic gates.

	5. Design of combinational circuit for BCD to decimal conversion to drive 7-segment display using multiplexer.
	6. Construction of simple arithmetic circuits-Adder, Subtractor
	7. Realization of RS-JK and D flip-flops using Universal logic gates.
	8. Realization of Universal Register using JK flip-flops and logic gates.
	9. Realization of Asynchronous Up/Down counter.
	10. Realization of Synchronous Up/Down counter.
SIGNALS AND SYSTEMS LABORATORY ROOM NO. A310 (2nd FLOOR)	1.Generation of various signals using MATLAB in both continuous and discrete domain
	2.Verification of independent variable transformation and amplitude scaling of signals in MATLAB
	3. To study Z- transform of: a) Sinusoidal signals b) Step functions.
	4. To compare Fourier and Laplace transformations of a signal.
	5. To study convolution theorem in time and frequency domain.
	6. To Study Signal Synthesis via sum of harmonics.
	7. To study LPF &HPF, band pass and reject filters using RC circuits.
	8. To demonstrate how analog signals are sampled and how different sampling rates affect the outputs.
	9. To determine the components of: a) Square wave b) Clipped sine wave.
DIGITAL SIGNAL PROCESSING LAB ROOM NO. A310 (2nd FLOOR)	1. Sampled sinusoidal signal, various sequences and different arithmetic operations.
	2. Convolution of two sequences using graphical methods and using commands- verification of the properties of convolution
	3. Z-transform of various sequences – verification of the properties of Z-transform.
	4. Twiddle factors – verification of the properties.
	5. DFTs / IDFTs using matrix multiplication and also using commands
	6. Circular convolution of two sequences using graphical methods and using commands, differentiation between linear and circular convolutions.
	7. Verifications of the different algorithms associated with filtering of long data sequences and Overlap –add and Overlap-save methods.
	8. Butterworth filter design with different set of parameters
	9. FIR filter design using rectangular, Hamming and Blackman windows
	10. Innovative (extra): Correlation- Auto-Correlation and Cross-Correlation., Verification of. Properties.

	11. Innovative (extra): Determination of FFT of a given sequence
	12. Innovative (extra): Recording and measuring the frequency of voice signals.
	13. Writing & execution of small programs related to arithmetic operations and convolution using Assembly Language of TMS320C 5416/6713 Processor, study of MAC instruction.
ANALOG COMMUNICATION LAB ROOM NO. A325 (2nd FLOOR)	1.Familiarization of basic instruments like Function Generator, CRO, DSO, Spectrum Analyzer etc.
	2. Measurement of modulation index of an AM signal.
	3. measurement of output power with varying modulation index an AM signal (for both DSB- & SSB).
	4. Measurement of distortion of the demodulated output with varying modulation index of an AM signal (for both DSB-SC & SSB).
	5. Measurement of power of different frequency components of a frequency modulated signal & the measurement of the bandwidth.
	6. Design a PLL using VCO & to measure the lock frequency.
	7. Design a FM demodulator using PLL.
	8. Measurement of selectivity, sensitivity, fidelity of a super hetero-dyne receiver.
	9.Generation of FM using VCO chip (to view the wave shapes)
	10.Generation of PAM using Transistor
	11.Generation of PWM & PPM (using IC 555 Timer)
DIGITAL COMMUNICATION LAB ROOM NO. A325 (3rd FLOOR)	1. Design, implementation and study of all the properties of 7-length and 15-length pn sequences using shift register.
	2. Study of PAM and demodulation.
	3. Study of PCM and demodulation.
	4. Study of line coders: polar/unipolar/bipolar NRZ, RZ, Manchester, AMI.
	5.Study of delta modulator and demodulator.
	6.Study of adaptive delta modulator and demodulator.
	7.Study of BPSK modulator and demodulator.
	8.Study of BFSK modulator and demodulator.
	9.Study of ASK modulator and demodulator.
MICROPROCESSORS & MICROCONTROLLERS LAB	1. Study of pre-written programs on trainer kit using the basic instruction set (data transfer, Load/Store, Arithmetic, Logical) Assignments based on above.
	2. Familiarization with 8085 & 8051simulator on PC. Study of prewritten programs using basic instruction set (data transfer, Load/Store, Arithmetic, Logical) on the simulator. Assignments based on above
	3.Programming using kit and simulator for: i) Table look up ii) Copying a block of memory

ROOM NO. A326 (2nd FLOOR)	iii) Shifting a block of memory iv) Packing and unpacking of BCD numbers
	4. Program using subroutine calls and IN/OUT instructions using 8255 PPI on the trainer kit e.g. subroutine for delay, reading switch state and glowing LEDs accordingly.
	5. Study of 8051 Micro controller kit and writing programs as mentioned in S/L3. Write programs to interface of Keyboard, DAC and ADC using the kit.
SOLID STATE DEVICES LABORATORY ROOM NO. A401 (3rd FLOOR)	1. Study input characteristics of BJT in common-emitter configuration.
	2. Study output characteristics of BJT in common-emitter configuration for different base currents and hence determine hybrid parameters.
	3. Study output characteristics of BJT in common-emitter configuration and find performance parameters (Voltage Gain, Current Gain, Input Impedance, Output Impedance).
	4. Study of drain characteristics and transfer characteristics of a JFET and hence determine the FET parameters (drain resistance, transconductance & amplification factor)
	5. Study of C-V characteristics of a MOS structure by appropriate software.
	6. Study of drain characteristics and transfer characteristics of a MOSFET and hence determine the FET parameters (drain resistance, transconductance & amplification factor).
BASIC ELECTRONICS LABORATORY – I ROOM NO. A 404 (3rd FLOOR)	1.Familiarisation with passive and active electronic components such as Resistors, Inductors, Capacitors, Diodes, Transistors (BJT) and electronic equipment like DC power supplies, multimeters etc.
	2.Familiarisation with measuring and testing equipment like CRO, Signal generators etc.
	3.Study of I-V characteristics of Junction diodes.
	4.Study of I-V characteristics of Zener diodes.
	5.Study of Half and Full wave rectifiers with Regulation and Ripple factors.
BASIC ELECTRONICS LABORATORY – II ROOM NO. A 404 (3rd FLOOR)	1. Study of I-V Characteristics of Field Effect Transistors.
	2.Determination of Common-Mode Rejection Ratio, Bandwidth and Off-Set Null of Op-amps.
	3.Study of Op-amp Circuits: Inverting and Non-Inverting Amplifiers, Adders, Integrators and Differentiators.
	4. Study of Logic Gates and Realization of Boolean Functions Using Logic Gates.
	5. Study of Characteristic Curves for Cb, Ce And Cc Mode Transistors. Engineering Drawing & Computer Graphics (Gr-B/Gr-A)

EMBEDDED SYSTEM LAB ROOM NO. A 416 (3rd FLOOR)	1. Digital temperature monitor with LCD display using Arduino & PIC.
	2. Digital Humanity Monitor with LCD display using Arduino.
	3. Robotic vehicle Controlled by Android App using Arduino or PIC Based Microcontroller.
	4. Digitally Controlled Home Automation by Android App using Arduino or PIC Based Microcontroller
	5. Password Based Door Lock using Arduino or PIC.
	6. Water Level Controller Using Arduino or PIC
	7. Ultra-Sonic Range Fender Using Arduino
	8. Rf base Robot
	9. Digital Visitors counter using Arduino or PIC.
	10. Motor speed control using Arduino or PIC
	11. OUTPUT Digital port extender.
	12. Controlling AC Light Using Arduino with Relay Module
	13. LED Matrix
	14. Running Light Display
	15. Obstacle Avoiding Robot
	16. Light Sensor
	17. Android control door.
	18. Accelerometer Control robot
	19. Rf Base Home Automation
	20. Ohm meter
VLSI DESIGN LAB ROOM NO. A 418 (3RD FLOOR)	1. Familiarity with Spice simulation tool
	2. Spice Simulation of Inverter, NAND, NOR Gates
	3. Familiarity with EDA tools for VLSI design /FPGA based system design
	4. Layouts, Transistors and tools.
	5. Design of CMOS XOR/XNOR Gates
	6. Design of CMOS Full adder
	7. Design of CMOS Flip flops (R-S, D, J-K)
	8. Design of 8-bit synchronous Counter
	9. Design of 8-bit bi-directional register with tri-stated input/output bus
	10. Design of a 12-bit CPU with few instructions and implementation and validation on FPGA
	A. DISCRETE ANALOG CIRCUITS. 1. Rectifiers. (To design a rectifier for a given average output dc voltage and a given load resistance, compare between the theoretical values of Vdc, V-rms, RF, HD, output regulation, transformer utility factor etc. with the measured values, and thus comprehend the relevance/effect of these various parameters.)
	2. DC power supplies regulation and protection circuits. (To learn designing a series transistor-based output regulation circuit, an output current limiting circuit, fold back circuit needed for a given output parameters.)

DESIGN LAB ROOM NO. A 418 (3RD FLOOR)	**B. OPAMP BASED ANALOG CIRCUITS** 3. Active filters: LP, BP, HP, 1st order, 2nd order. (To learn the design of a filter and its inherent phase shifting characteristics.)
	4. 555 based monostable and astable of duty cycle below and above 50%. (To learn designing 555 based timer circuits.)
	C. DIGITAL LOGIC CIRCUITS 5. Design and implement a BCD to 7-segment decoder with basic and universal gates. (To understand clearly the method of writing a truth table, use of K-map, simplifying a logic function and optimum design with minimum number of ICs and inputs.)
	6. Designing logic circuits using multiplexers, demultiplexers and gates to implement logic functions. (To learn the use multiplexers and demultiplexers)
CIRCUITS AND NETWORKS LABORATORY ROOM NO. A418 (3rd FLOOR)	1.Characteristics of Series & Parallel Resonant circuits
	2.Verification of Network Theorems
	3.Transient Response in R-L & R-C Networks; simulation / hardware
	4.Transient Response in RLC Series & Parallel Circuits & Networks; simulation / hardware
	5.Determination of Impedance (Z), and Admittance (Y) parameters of Two-port networks
	6.Generation of periodic, exponential, sinusoidal, damped sinusoidal, step, impulse, and ramp signals using MATLAB
	7.Representation of Poles and Zeros in s-plane, determination of partial fraction expansion in s-domain and cascade connection of second-order systems using MATLAB
	8.Determination of Laplace Transform, different time domain functions, and Inverse Laplace
	9.Transformation using MATLAB

12.0 FACULTY PARTICIPATIONS:

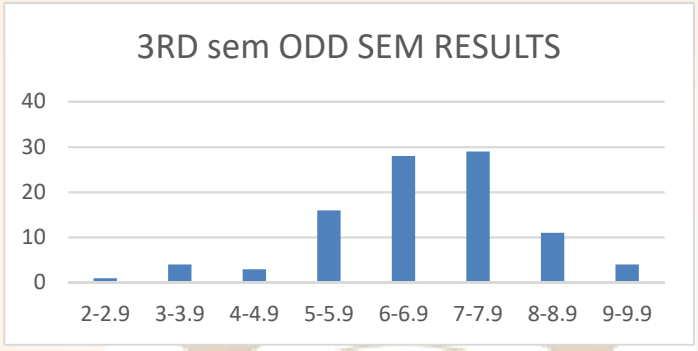
(a) Participation in parents department

i)	External sponsored projects	
ii)	Consultancy	
iii)	Continuing education	√
iv)	Collaboration (industrial/institutional)	
v)	Students Projects	√
vi)	Students Guidance (M. Tech/PhD)	
vii)	Invited lectures (National/International)	
viii)	Professional Society Activities	√
ix)	Conferences/seminars/winter/summer schools	√
x)	Research Publications	√
xi)	Text Books/Monographs published	
xii)	Patents/ Awards received	
xiii)	Any financial Assistance for projects	

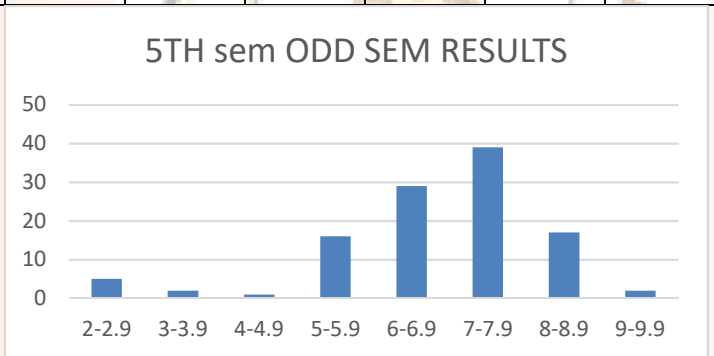
13.0 NA

14.0 STUDENTS RESULTS:

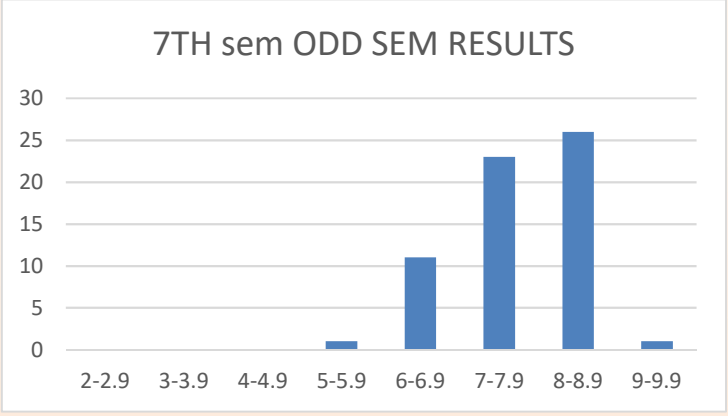
Grades	2-2.9	3-3.9	4-4.9	5-5.9	6-6.9	7-7.9	8-8.9	9-9.9
3RD sem ODD SEM RESULTS	1	4	3	16	28	29	11	4



Grades	2-2.9	3-3.9	4-4.9	5-5.9	6-6.9	7-7.9	8-8.9	9-9.9
5TH sem ODD SEM RESULTS	5	2	1	16	29	39	17	2



Grades	2-2.9	3-3.9	4-4.9	5-5.9	6-6.9	7-7.9	8-8.9
7TH sem ODD SEM RESULTS	0	0	0	1	11	23	26



15.0 INDUSTRIAL TRAINING:

Electronics & Communication Engineering department co-ordinates industrial Training for every student as this is compulsory according to university course curriculum.

Sl. No.	Roll No.	Name	COMPANY NAME	PROJECT DURATION
1	24100314028	PROHLAD MONDAL	AIRPORT AUTHORITY OF INDIA	25 DAYS
2	24100314029	RAJKUMAR MAITY	AIRPORT AUTHORITY OF INDIA	25 DAYS
3	24100314030	RIDDHI DAS	AIRPORT AUTHORITY OF INDIA	25 DAYS
4	24100314031	ROHIT KUMAR SHAW	AIRPORT AUTHORITY OF INDIA	25 DAYS
5	24100315089	ISAN SAHA	AKASHVANI KOLKATA	2 WEEKS
6	24100314019	ESHITA PRADHAN	DEPARTMENT OF SIGNAL & TELECOMMUNICATIONS HOWRAH	18 DAYS
7	24100314015	DEBASISH SAHA	DOORDARSHAN KENDRA	5 DAYS
8	24100314008	ANIMESH AICH	EASTERN RAILWAY	2 WEEKS
9	24100314017	DEEPAK KUMAR PATHAK	EASTERN RAILWAY	15 DAYS
10	24100314018	DIYA KAYAL	EASTERN RAILWAY	15 DAYS
11	24100314034	SAYANTI GHOSH	EASTERN RAILWAY	14 DAYS
12	24100314035	SHUBHANGI BISWAS	EASTERN RAILWAY	14 DAYS
13	24100314009	ARGHAYA GOSWAMI	EASTERN RAILWAY HOWRAH, AIRPORT AUTHORITY OF INDIA, N.S.C.B.I AIRPORT, KOLKATA, MEZIA THERMAL POWER STATION, DVC	17DAYS, 10DAYS, 20DAYS
14	24100314002	ADITYA GHOSH	EASTERN RAILWAY HOWRAH, DVC, MTPS	18 DAYS, 21 DAYS
15	24100314003	AFSHA KHATUN	EASTERN RAILWAY HOWRAH, DVC, MTPS	18 DAYS, 21 DAYS
16	24100314007	AMRITANGSHU DATTA	EASTERN RAILWAY HOWRAH, DVC, MTPS	18 DAYS, 21 DAYS
17	24100314027	PRITAM SARDAR	EASTERN RAILWAY HOWRAH, MEJIA THERMAL POWER STATION, DVC	18DAYS, 21 DAYS
18	24100315102	SUJOY DEBNATH	EASTERN RAILWAY, DAMODAR VALLEY CORPORATION	14 DAYS, 21 DAYS
19	24100314033	SAIKAT JANA	GLOBSYN SKILLS	21 DAYS
20	24100315100	SUDIPTA AICH	GLOBSYN SKILLS	72 HRS
21	24100315101	SUDIPTO ROY	GLOBSYN SKILLS	72 HRS
22	24100314024	PAWAN KUMAR MUNDA	GLOBSYN SKILLS, HEC	30 DAYS, 15 DAYS

16.0 STUDENT'S MENTORSHIP:

Name of Faculty	Students Roll No.	Frequency of interactions	Remarks
Chittajit Sarkar	24100317008-11 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316027-32 (2nd Year)	Once in a week	
	24100315001-07 (3rd Year)		
	24100314001-04 (4th Year)		
Kakali Gupta	24100317012-15 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316033, 24100316035 - 39 (2nd Year)	Once in a week	
	24100315008-13 (3rd Year)		
	24100314005-08 (4th Year)		
Sheershendu Bhattacharya	24100317016-19(1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316040-42, 24100316044-46 (2nd Year)	Once in a week	
	24100315014-21 (3rd Year)		
	24100314009-12 (4th Year)		
Antara Das	24100317020-23 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken.
	24100316047-52 (2nd Year)	Once in a week	
	24100315022-27 (3rd Year)		

	24100314013-17 (4th Year)		3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
Supriya Roy	24100317024-27 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316053-58, (2nd Year)	Once in a week	
	24100315028-34 (3rd Year)		
	24100314018-22 except 24100314021 (4th Year)		
Anindya Ghosh	241003170328-31 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316059-64, (2nd Year)	Once in a week	
	24100315035-41 except 24100315038 (3rd Year)		
	24100314023-26 (4th Year)		
Susobhan Ray	24100317032-35 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316065-70, (2nd Year)	Once in a week	
	24100315042-43, 24100316001, 24100316006-009 (3rd Year)		
	24100314027-30 (4th Year)		
Nabhojit Dutta	24100317036-39(1st Year)	Once in a month	1. Collected their certificates and testimonials

	24100316071-76, (2nd Year)	Once in a week	2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316010, 24100316012-13, 24100316016, 24100316018, 24100316023, 24100316026 (3rd Year)		
	24100314031-34 (4th Year)		
Anindya Sundar Das	24100317040-43 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316077-82, (2nd Year)	Once in a week	
	24100315044-49 (3rd Year)		
	24100314035-38 (4th Year)		
Divya Rao	24100317044-47 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316083-89 except 24100316085, (2nd Year)	Once in a week	
	24100315050-56 Except 24100315052 (3rd Year)		
	24100314039-43 (4th Year)		
Soumyajit Das	24100317048-52 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken.
	24100316090-96 except 24100316094, (2nd Year)	Once in a week	

	24100315057-62 (3rd Year)		3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100314044, 24100315081-85 except 24100315083 (4th Year)		
Atreyee Ghosh	24100317053-57 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316097-102 (2nd Year)	Once in a week	
	24100315063-69 (3rd Year)		
	24100315086-90 (4th Year)		
Ipsita Ghosh	24100317058-62 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316103-108 (2nd Year)	Once in a week	
	24100315070-76 (3rd Year)		
	24100315091-95 (4th Year)		
Arpita Das	24100317063-67 (1st Year)	Once in a month	1. Collected their certificates and testimonials 2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316109-114 (2nd Year)	Once in a week	
	24100315077-80, 24100316025, 24100316014, 24100316017 (3rd Year)		
	24100315096-100 (4th Year)		
	24100317068-73 (1st Year)	Once in a month	1. Collected their certificates and testimonials

Sourav Sadhukhan	24100316116. 24100317001-007 except 24100317006 (2nd Year)	Once in a week	2. Problems and doubts regarding the different classes and others college activities had been discussed and necessary action had taken. 3. Encourage them to attain the regular classes and submit the assignment within schedule time. 4. Encourage them to take participation in different cultural programme, quiz and debate competition.
	24100316021,24100316022, 24100316002-05, 24100316011 (3rd Year)		
	24100315101-105 (4th Year)		

17.0 DEPARTMENTAL BUDGET:

Swami Vivekananda Institute of Science & Technology		
Sonarpur, Kolkata-700145		
Budget and Allocation Statement		
Dept of Electronics & Communication Engineering		Rupees in Lacs
Accounts Head	**2017-2018**	
	Budgeted Amount.	**Allocation Amount.**
Capital Equipment, Software & License Fees	2.50	2.50
Library Books	1.00	1.00
Research & Development	1.25	1.25
Furniture & Fixture	0.60	0.60
Laboratory Equipment	1.50	1.50
Visiting Faculty Remuneration	0.00	0.00
Laboratory Exp. Consumable	0.25	0.25
Laboratory Maintenance	0.65	0.65
Students Projects	0.65	0.65
Journal & Periodicals	0.40	0.40
Faculty Development & Initiative	1.00	1.00
Contingency Exp	0.50	0.50
Total	10.30	10.30

Submitted by

Mr. Chittajit Sarkar

HOD (ECE)